Host-country institutional constraints on firm behaviours across international joint venture life-cycle stages

Host-Country Institutional Constraints on Firm Behaviours across International Joint Venture Life-cycle Stages

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Author's Declaration

I declare that this thesis entitled 'Host-Country Institutional Constraints on Firm Behaviours across International Joint Venture Life-cycle Stages' represents my original work and it hasn't been submitted, either in part or whole, for a degree at this or any other University. Wherever other sources of information are used, every effort has been made to show this, with due reference to the literature and acknowledgement of the contributions of others.

Abstract

With the massive growth in the formation of international joint ventures (IJVs) over the past three decades, research on firm behaviours across IJV life-cycle stages has become an important issue in international business study. Although the significance of institutions as a set of constraints on firm behaviours has been recognised, our knowledge of the mechanisms through which host-country institutions constrain firm behaviours at different IJV life-cycle stages have been limited. This thesis contributes to this research field by revealing several new mechanisms through which host-country institutions constrain firm behaviours at different IJV life-cycle stages.

At the stage of IJV formation, we have collected data from 431 outward FDI projects conducted by Chinese manufacturing firms between 2006 and 2008 and examined whether host-country institutions constrain the foreign direct investment (FDI) ownership mode choice (OMC) of an IJV through the national cultural dimension of IR. We have found that host-country indulgence enhances the relationships between transaction-cost attributes of an FDI project (a parent firm's R&D intensity, a parent firm's host-country experience, and host-country political risk) and the FDI OMC of an IJV and that the direct relationship between host-country indulgence and the FDI OMC of an IJV is insignificant.

At the stage of IJV operation, we have collected data from 256396 domestic firms and 68381 foreign-invested firms in Chinese manufacturing industry between 1998 and 2007 and investigated whether host-country institutions constrain intra-industry productivity spillovers from IJVs to domestic firms through state ownership of the host-country IJV partner. We have found that

state ownership of the host-country IJV partner enhances intra-industry productivity spillovers from IJVs to domestic firms, especially to state-owned enterprises (SOEs).

At the stage of IJV termination, we have collected data from 16583 manufacturing IJVs in China between 2005 and 2006 and explored whether through two informal mechanisms - rates of wholly foreign-owned enterprises (WFOEs)/successful WFOEs in a host industry and host-regional SOE dominance - and two formal mechanisms - host-regional centrally-planned allocation of economic resources and FDI-restricted industry - host-country institutions constrain the conversion of an IJV into a WFOE (CIW). We have found (1) positive effects of rates of WFOEs/highly profitable WFOEs/high market-share WFOEs in a host industry and (2) a negative effect of host-regional SOE dominance, on the CIW. We have also found no significant impact of host-country institutions on the CIW through the two formal mechanisms. Theoretical, managerial, and policy implications of our findings are also discussed.

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Chapter 1. Introduction

1.1 Introduction

Because of the massive growth in the formation of international joint ventures (IJVs) over the past three decades, research on firm behaviours across IJV life-cycle stages becomes an important issue in international business study (Steensma, Barden, Dhanaraj, Lyles, & Tihanyi, 2008). An IJV life-cycle refers to the formation, operation and termination of an IJV. A multinational enterprise's (MNE) decision of forming an IJV and a host-country firm's decision of joint venturing with an MNE are the two principal firm behaviours at the stage of IJV formation. Important firm behaviours at this stage also include the search and selections of IJV partners and the negotiations and contracting between IJV partners (Luo, 1997; Roy & Oliver, 2009). We define the stage of IJV operation as the general stage between the IJV formation and the IJV termination (Arino & De La Torre, 1998; Doz, 1996; Ring & Van de Ven, 1994). At this stage, firm behaviours are featured by (1) interactions between IJV partners such as inter-partner collaborations (Li, Zhou, & Zajac, 2009; Loess & Yavas, 2003) and conflicts (Blodgett, 1992; Yan & Zeng, 1999) and (2) interactions between the IJV and other firms such as inter-firm cooperations (Lee, 2001; Lihong & Goffin, 2001) and spillovers (Blomström & Sjöholm, 1999; Javorcik & Spatareanu, 2008), during the actual operation of the IJV. Firm behaviours at the stages of IJV formation and IJV operation are widely considered to influence IJV performance (Brouthers, Brouthers, & Werner, 2003; Geringer & Hebert, 1991; Luo, 1997). The IJV termination marks the last stage of an IJV life-cycle. An IJV can be terminated by liquidating the IJV or converting the IJV into a wholly foreign-owned enterprise (WFOE) or into a wholly local-owned enterprise (Reuer,

2000). The IJV termination is often considered as a measure of IJV performance, especially poor IJV performance (Yan & Zeng, 1999). However, some IJV terminations represent the fulfilment of the purposes of forming the IJV (Reuer, 1998), such as the foreign IJV partner's acquisition of host-country knowledge or networks or the host-country IJV partner's acquisition of foreign knowledge or technologies. Hence, the IJV termination is not necessarily a negative outcome. Instead of IJV performance, determinants of the IJV termination become the most concerned issue at this stage (Gaur & Lu, 2007; Lu & Xu, 2006; Meschi, Phan, & Wassmer, 2016).

From an institutional perspective, host-country institutions constrain firm behaviours across IJV life-cycle stages, because legitimate firm behaviours are more likely to improve firm performance (Dacin, Oliver, & Roy, 2007). Institutional theory suggests that institutions define legitimacy and sanctions, through formal and informal mechanisms (North, 1990). Formal institutions define legitimate firm behaviours by establishing written rules or constraints such as laws and regulations (Scott, 1995b). The purpose of using host-country formal institutions to constrain inward FDI is to maximise local interests from inward FDI or to protect national interests (Cui & Jiang, 2012). The mechanisms through which host-country formal institutions constrain firm behaviours at different IJV life-cycle stages include FDI restrictions, constraints on access to local resources, mandatory exporting, and interference with other operational matters (Meyer, Estrin, Bhaumik, & Peng, 2009). Informal institutions define legitimate firm behaviours by establishing unwritten rules and norms such as socially-shared norms and understandings (Helmke & Levitsky, 2004). Host-country informal institutions constrain inward FDI by defining the social acceptability of firm behaviours or by

shaping a firm's internal representation of the external environment (Lu & Xu, 2006; Xu & Shenkar, 2002). The mechanisms through which host-country informal institutions constrain firm behaviours at different IJV life-cycle stages include culture (Brouthers, 2002), managerial norms (Meyer, 2001), acceptability of bribery (Peng, 2003), antiforeigner attitudes (Cui, Jiang, & Stening, 2011), network-based business norms (Peng & Heath, 1996) or inter-organisational imitation (Lu, 2002). Conformity to institutions is considered legitimate, while defiance of institutions is considered illegitimate and will be sanctioned (Scott, 1995a). Illegitimate firm behaviours at different IJV life-cycle stages often have been found to negatively affect IJV performance (Lu & Xu, 2006; Meschi et al., 2016).

Although the significance of institutions as a set of constraints on firm behaviours has been recognised, our understanding of the mechanisms through which host-country institutions constrain firm behaviours across IJV life-cycle stages have been limited. Given the importance of institutional mechanisms in determining legitimate firm behaviours and thus IJV performance, this thesis focuses on revealing new mechanisms through which host-country institutions constrain firm behaviours at different IJV life-cycle stages.

1.2 Research background and potential contributions

This thesis is inspired by and built on existing research on institutional constraints on firm behaviours across IJV life-cycle stages.

Culture is considered as an important institutional constraint across IJV life-cycle stages. Culture is often defined as "the collective programming of the human mind that distinguishes the members of one human group from those

of another. Culture in this sense is a system of collectively held values" (Hofstede, 1984). It shapes the norms and values of a firm in business. At the stage of IJV formation, Shane (1993) suggests that MNEs are more likely to choose the IJV mode of entry in low power distance host-countries, because low power distance is associated with high interpersonal trust which may reduce the difficulties in managing an IJV. Kaufmann and O'Neil (2007) suggest that culturally distant IJV partners are more likely to form an IJV with a marketing/supplier focus because marketing and supplying practices differ between cultures, while culturally similar IJV partners are more likely to form an IJV with an innovation focus since innovation requires extensive and effective interactions between IJV partners. At the stage of IJV operation, Iriyama, Shi, and Prescott (2014) suggest that an IJV is more likely to experience frequent and directional reversal of ownership changes in collectivism host countries than in individualism host countries, since collectivist host-country IJV partners tend to exhibit a within-group view and therefore find it difficult to develop a favourable exchange cycle between IJV partners while individualist host-country IJV partners are not constrained by the within-group view. At the stage of IJV termination, Makino, Chan, Isobe, and Beamish (2007) suggest that IJVs formed between culturally distant partners are more likely to terminate since cultural distance between IJV partners is a major source of misunderstanding and miscommunication. Other culture-related studies have also examined whether (1) cultural contexts such as the investment risk and market potential (Brouthers, 2002) or (2) national cultural dimensions such as uncertainty avoidance (Brouthers & Brouthers, 2003; Erramilli, 1996; Makino & Neupert, 2000) and long-term orientation (Peng & Beamish, 2014), constrain firm behaviours at different IJV life-cycle

stages. However, whether the national cultural dimension of indulgence-restraint (IR) constrains firm behaviours at different IJV life-cycle stages remains unanswered. IR is defined as the extent to which people in a society try to control their "gratification (s) of basic and natural human desires related to enjoying life and having fun" (Hofstede, 1991). It reflects a society's belief that the gratification of human desires has to be restrained and ruled by stringent social norms and values such as moral disciplines, thrift and maintaining order in the nation (Hofstede, Hofstede, & Minkov, 2010). We argue that the host-country national cultural dimension of IR will shape the norms and understandings of both host-country IJV partners and host-country employees and therefore this institutional factor will constrain an MNE's decision of whether to choose the IJV mode of entry. We will fill this research gap by exploring Research question 1 in 1.3 Research questions and objectives.

State ownership is another institutional constraint on firm behaviours across IJV life-cycle stages. State ownership refers to the holding of firm shares by governments. It shapes the motivations, capabilities (Buckley, Clegg, & Wang, 2002) and legitimate status (Cuervo-Cazurra, Inkpen, Musacchio, & Ramaswamy, 2014) of a firm in business activities. At the stage of IJV formation, Cui and Jiang (2012) suggest that state-owned MNEs are more likely to enter via an IJV under host-country institutional pressures than privately-owned MNEs, because state-owned MNEs are often perceived as foreign political forces and in need of legitimacy spillovers from host-country IJV partners. At the stage of IJV operation, Liu, Vredenburg, and Steel (2014) suggest that state-owned host-country IJV partners and non-state-owned ones may bring distinct management challenges to an IJV's responses to activist

organisations. Chen, Paik, and Park (2010) suggest that MNEs tend to exert less social control in IJVs with state-owned host-country partners (SIJVs) than non-SIJVs, due to state-owned enterprises' (SOEs) inherent resistance to their foreign IJV partners' social influences. At the stage of IJV termination, Mohr, Wang, and Fastoso (2016) suggest that the probability of IJV dissolution declines as the equity share held by host-country state-controlled actors increases, because host-country state-controlled actors tend to contribute more in an IJV's absorbing external resource constraints than privately-owned actors. Other state ownership-related research has also explored whether host-regional SOE dominance (Liao, 2015) or the privitisation of SOEs (Brouthers & Bamossy, 2006) constrain firm behaviours at different IJV life-cycle stages. However, little is known about whether state ownership of the host-country IJV partner constrains productivity spillovers from IJVs. We argue that since an SOE's political objectives and technological capabilities differ from a POE, SIJVs' motivations and abilities to help improve domestic firms' productivity differ from IJVs with privately-owned host-country partners (PIJVs). As a result, productivity spillovers from SIJVs to domestic firms should differ from those from PIJVs. We will fill this research gap by answering Research question 2 in 1.3 Research questions and objectives. In addition, whether host-regional SOE dominance constrains the IJV termination also remains unanswered. We argue that since host-regional SOE dominance may create a business environment unfriendly to MNEs (Liao, 2015), MNEs are more in need of the host-country IJV partner who has a better understanding of surviving this environment. Hence, the conversion of an IJV into a WFOE (CIW) is less

likely to happen in such a host region. We will fill this research gap by exploring Research question 3 in 1.3 Research questions and objectives.

Inter-organisational imitation has also been found to constrain firm behaviours at the stage of IJV formation. Inter-organisation imitation refers to the imitation of organisational practices and structures adopted by others in the same organisational field under isomorphic pressures (Meyer & Rowan, 1977). Inter-organisational imitation is commonly divided into three types: frequency-based, trait-based and outcome-based (Haunschild & Miner, 1997). Frequency-based imitation relies on a firm's belief that structures and practices adopted by a large number of organisations gain strong legitimacy. Trait-based imitation refers to a firm's following behaviours or strategies of other successful firms. Outcome-based imitation suggests that a firm imitates practices that generate positive outcomes to other firms and avoid those that generate negative outcomes. At the stage of IJV formation, Lu (2002) has found inter-organisational imitations among MNEs on whether to choose the IJV mode of entry. Xia, Tan, and Tan (2008) have also found similar firm behaviours at the stage of IJV formation. However, little is known about whether inter-organisational imitation constrains firm behaviours at the stage of IJV termination. We argue that legitimate status of the IJV mode relative to the WFOE mode may change at the post-formation stages and therefore inter-organisational imitation may lead to the CIW when the WFOE mode becomes more legitimate in the host-country context. We will fill this research gap by answering Research question 3 in 1.3 Research questions and objectives.

Host-country resource allocation institutions have been found to constrain firm behaviours at different IJV life-cycle stages. We define resource allocation institutions as institutions which establish rules of the distribution of resources among firms. At the stage of IJV formation, Meyer and Nguyen (2005) suggest that MNEs are more likely to choose the IJV mode of entry where host-country institutions cannot facilitate MNEs' access to land, since MNEs can ally with host-country IJV partners who have the access. At the stage of IJV operation, Wang, Sheng, Wu, and Zhou (2017) suggest that foreign partner opportunism is more likely to happen in an IJV which is constrained by host-government resource dependence, because the host-country IJV partner's familiarity with host governments may increase its power in the IJV and the foreign partner may manage this power imbalance through opportunistic behaviours such as controlling the process of sharing foreign information. Other studies have also explored the mechanisms such as the development of local equity market through which host-country resource allocation institutions constrain firm behaviours at different IJV life-cycle stages (Driffield, Mickiewicz, & Temouri, 2016). However, little is known about whether host-country resource allocation institutions constrain the IJV termination. We argue that host-regional centrally-planned allocation of economic resources (CAER) will prevent the CIW, because MNEs need the host-country IJV partner in accessing local economic resources where the allocation of economic resources is controlled by the local government. We will fill this research gap by exploring Research question 3 in 1.3 Research questions and objectives.

FDI regulations also have been considered to constrain firm behaviours across IJV life-cycle stages. FDI regulations refer to rules or laws which are made

and maintained by the host-country government to protect domestic industries or national interests (Cui & Jiang, 2012). At the stage of IJV formation, Brouthers (2002) suggests that many legal restrictions on entry mode will lead to the FDI OMC of an IJV, because in this host context managers consider an IJV as a more legitimate mode of entry than a WFOE. Nguyen and Meyer (2004) suggest that FDI regulations can inhibit the formation of SIJVs through partial acquisitions in some host countries. At the stage of IJV operation, Blodgett (1991) suggests that a host-country government's ownership control may give the host-country IJV partner an advantage, which is termed "government suasion", in expanding its ownership position in an IJV. At the stage of IJV termination, Puck, Holtbrügge, and Mohr (2009) suggest that the complexity of host-country FDI regulations will prevent the CIW, because MNEs may find it difficult to manage the complex FDI regulations on their own. Other FDI regulation-related studies have also investigated whether FDI regulations constrain firm behaviours at different IJV life-cycle stages (Brouthers & Brouthers, 2003; Cui et al., 2011; Demirbag, Glaister, & Tatoglu, 2007; Kim & Gray, 2008). However, whether the FDI-restricted industry constrains the IJV termination remains unknown. We argue that the host-country IJV partner is necessary for an MNE to leverage legitimacy in an FDI-restricted industry, because host industries in which FDI is restricted are strategically important or politically sensitive or characterised by overcapacity or overinvestment (Reuters, 2017). Therefore, the CIW is less likely to happen in an FDI-restricted industry. We will fill this research gap by answering Research question 3 in 1.3 Research questions and objectives.

Host-country institutions have also been found to constrain firm behaviours at different IJV life-cycle stages through other mechanisms such as control of corruption (Meschi, 2009; Sartor & Beamish, 2018; Uhlenbruck, Rodriguez, Doh, & Eden, 2006), country risks or uncertainties (Ahmed, Mohamad, Tan, & Johnson, 2002; Brouthers, 1995; Brouthers, Brouthers, & Werner, 2000; Delios & Beamish, 1999; Okoroafo, 1990), institutional barriers (Chang, 2019; Cui et al., 2011), institutional development or advancement (Dikova & Van Witteloostuijn, 2007; Giachetti, Manzi, & Colapinto, 2019), regional marketization (Buckley, Clegg, & Tan, 2003; Shi, Sun, & Peng, 2012; Xie, 2017), rule of law (Hearn, 2015; Ramachandran, Clark, McIver, & Miller, 2011; Roy & Oliver, 2009), or shareholder protections (Devarakonda, Klijn, Reuer, & Duplat, 2020; Meyer, Ding, Li, & Zhang, 2014; Talamo, 2009). We review those findings briefly in this section, because the exploration of those mechanisms are beyond the scope of this thesis and we will control those effects in our empirical tests when necessary.

This thesis will contribute to IJV literature in the following ways. In general, it will extend our knowledge of the mechanisms through which host-country institutions constrain firm behaviours across IJV life-cycle stages. In particular, at the stage of IJV formation, this thesis explores whether host-country institutions constrain the FDI OMC of an IJV through the national cultural dimension of IR. At the stage of IJV operation, this thesis investigates whether host-country institutions constrain intra-industry productivity spillovers from IJVs to domestic firms through state ownership of the host-country IJV partner. At the stage of IJV termination, this thesis examines whether host-country institutions constrain the CIW through two informal mechanisms - rate of WFOEs/successful WFOEs in a host industry and host-

regional SOE dominance - and two formal mechanisms - host-regional CAER and FDI-restricted industry.

1.3 Research questions and objectives

This thesis is inspired and transpired by identifying and addressing the following research questions.

Research question 1: At the stage of IJV formation, is an MNE's propensity to choose the IJV mode of entry (compared with the WFOE mode of entry) in indulgent host countries different from that in restraint host countries?

This research question contains two parts. The first part is the direct effects of (1) the host-country cultural dimension of IR and (2) transaction-cost attributes of an FDI project, on the FDI OMC of an IJV. It represents the baseline relationships for us to investigate the moderating effects of the host-country national cultural dimension of IR. Andersson, Cuervo-Cazurra, and Nielsen (2014) suggest that the theoretical framework explaining the baseline arguments needs to be specified to explain any moderating effect. We use institutional theory to explain the relationship between the host-country cultural dimension of IR and the FDI OMC of an IJV, and we use transaction-cost economics (TCE) to explain the relationships between transaction-cost attributes of an FDI project and the FDI OMC of an IJV. The second part is about the moderating effects of the host-country cultural dimension of IR on the relationships between transaction-cost attributes of an FDI project and the FDI OMC of an IJV. We integrate institutional theory with TCE in explaining the moderating effects, because existing research suggests that institutions arrange the structure in which transactions happen (Roberts & Greenwood,

1997). We theorise that the host-country cultural dimension of IR arranges the institutional structure in which the FDI OMC of an IJV happen.

Theoretically, this research question aims to address the research gap concerning the institutional role that the host-country national cultural dimension of IR plays in the FDI OMC of an IJV. Practically, this research question aims to address MNE managers' concerns over transaction costs associated with their FDI OMC in indulgent host countries and restraint host countries. This research question also aims to address host-country policymakers' concerns over the national cultural dimension of IR's impact on inward FDI and thus the efforts that they can spend on reducing the negative impact.

Research question 2: At the stage of IJV operation, will state ownership of the host-country IJV partner influence the magnitude of intra-industry productivity spillovers from IJVs to domestic firms?

The magnitude of intra-industry productivity spillovers from IJVs to domestic firms refers to the extent to which domestic firms experience changes in productivity from the presence of IJVs within the same industry (Javorcik & Spatareanu, 2008). Research question 2 comprises two parts. The first part is the direct effects of (1) state ownership of the host-country IJV partner and (2) state ownership of a domestic firm, on the spillovers. It illustrates the baseline relationships for us to investigate the moderating effects of state ownership of a domestic firm. We incorporate technology gap and absorptive capacity into an institutional framework to explain the baseline relationships, because (1) technology gap determines the potential for domestic firms to learn from IJVs, (2) absorptive capacity determines domestic firms' ability to

take advantage of the technology gap in improving their productivity and (3) institutions arrange the structure in which the spillovers happen (Meyer, 2004). We theorise that state ownership of the host-country IJV partner affects the technology gap between IJVs and domestic firms and the absorptive capacity of domestic firms to learn from IJVs. The second part is about the moderating effects of state ownership of a domestic firm on the relationship between state ownership of the host-country IJV partner and the magnitude of intra-industry spillovers from IJVs. Here, we also adopt the previous institutional framework to explain the moderating effects. We theorise that state ownership of a domestic firm affects the technology gap between SIJVs (PIJVs) and domestic firms and the absorptive capacity of domestic firms to learn from SIJVs (PIJVs).

Theoretically, this research question aims to address the research gap concerning the institutional role that state ownership of the host-country IJV partner plays in intra-industry productivity spillovers from IJVs to domestic firms. Practically, this research question aims to address MNE managers' concerns over IJV partner selection-related productivity spillovers from their IJVs to their local competitors. This research question also aims to address host-country policymakers' concerns over the effective utilisation of IJVs in improving domestic firms' productivity.

Research question 3: At the stage of IJV termination, is there any new mechanism through which host-country institutions constrain the conversion of an IJV into a WFOE?

This research question also consists of two parts. The first part is the direct effects of rates of WFOEs/successful WFOEs in a host industry and host-

regional SOE dominance on the CIW. It explores two informal mechanisms through which host-country institutions may constrain the CIW. The second part is the direct effects of host-regional CAER and FDI-restricted industry on the CIW. It explores two formal mechanisms through which host-country institutions may constrain the CIW. We use institutional theory to explain the above relationships, because institutions define whether firm behaviours such as the CIW are legitimate (Scott, 1995a).

Theoretically, this research question aims to address the research gap concerning new mechanisms through which host-country institutions constrain the CIW. Practically, this research question aims to address MNE managers' concerns over the legitimate status of their IJVs and thus the need to convert their IJVs into WFOEs. This research question also aims to address host-country policymakers' concerns over their local institutions' influence on IJVs and thus the efforts that they can spend on reducing the negative influences.

1.4 Structure of this thesis

This section outlines this thesis and explains the content of each chapter.

Chapter 1-Introduction

This chapter introduces the research background and motivations, key research questions, and potential contributions.

Chapter 2-Entering Indulgent Countries via An International Joint Venture or a Wholly Foreign-owned Enterprise?

Theoretically, this chapter integrates TCE and institutional theories, treats the host-county national cultural dimension of IR as an institutional constraint

and hypothesises whether an MNE's propensity to choose the IJV mode of entry differs between indulgent host countries and restraint host countries. Empirically, this chapter uses cross-sectional data from 431 outward FDI projects conducted by Chinese manufacturing firms between 2006 and 2008 for empirical tests. Using Logit regressions, this chapter tests (1) the direct effect of the host-country cultural dimension of IR on the FDI OMC of an IJV and (2) the moderating effects of the host-country cultural dimension of IR on the relationships between transaction-cost attributes of an FDI project (a parent firm's R&D intensity, a parent firm's international experience, and host-country political risk) and the FDI OMC of an IJV.

Chapter 3-Impact of state ownership of the host-country IJV partner on Intra-industry Productivity Spillovers from International Joint Ventures

Theoretically, this chapter incorporates technology gap and absorptive capacity into an institutional framework, treats state ownership of the host-country IJV partner as an institutional constraint and hypothesises whether the magnitude of intra-industry productivity spillovers from SIJVs to domestic firms differs from that of intra-industry productivity spillovers from PIJVs. Empirically, this chapter uses panel data from 256396 domestic firms and 68381 foreign-invested firms in Chinese manufacturing industry between 1998 and 2007 for empirical tests. Using panel OLS regressions, this chapter compares (1) the magnitude of intra-industry productivity spillovers from SIJVs to domestic firms and that of intra-industry productivity spillovers from PIJVs and (2) the magnitude of intra-industry productivity spillovers from SIJVs (PIJVs) to SOEs and that of intra-industry productivity spillovers from SIJVs (PIJVs) to POEs.

Chapter 4-Conversion of an International Joint Venture into a Wholly Foreign-owned Enterprise under Host-Country Institutional constraints

Theoretically, this chapter adopts institutional theory and hypothesises that host-country institutions constrain the CIW through two informal mechanisms - rates of WFOEs/successful WFOEs in a host industry and host-regional SOE dominance - and two formal mechanisms - host-regional CAER and FDI-restricted industry (excluding WFOE-only industries). Empirically, this chapter adopts panel data from 16583 manufacturing IJVs in China between 2005 and 2006 for empirical analyses. Using panel Logit regressions, this chapter tests the effects of rates of WFOEs/highly profitable WFOEs/high market-share WFOEs in a host industry, host-regional SOE dominance, host-regional CAER, and FDI-restricted industry (excluding WFOE-only industries), on likelihood of the CIW.

Chapter 5-Conclusions

This chapter concludes the whole thesis by summarising its key findings and contributions, listing practical implications for managers and policymakers, acknowledging research limitations, and pointing out future research questions.

This thesis has three separate essays (Chapters 2-4), but they are closely connected. On one hand, three essays are separate from a perspective of the institutional mechanisms that they focus on and respectively extend our knowledge of host-country institutional constraints - culture (Chapter 2), state ownership (Chapters 3 and 4), inter-organisational imitation, resource allocation institutions and FDI regulations (Chapter 4) - on firm behaviours across IJV life-cycle stages. This research design is driven by matching

research gaps in this field and data available for us to collect to address those research gaps. On the other hand, three essays are closely connected from a perspective of IJV life-cycle stages and respectively extend our knowledge of host-country institutional constraints on firm behaviours at the stages of IJV formation (Chapter 2), IJV operation (Chapter 3) and IJV termination (Chapter 4). All three essays are based on institutional theory and therefore they share common assumptions on firm behaviours under institutional constraints.

Chapter 2. Entering indulgent countries via an International Joint Venture or a Wholly Foreign-owned Enterprise?

2.1 Abstract

This chapter intends to explore new mechanisms through which host-country institutions constrain firm behaviours at the stage of IJV formation. Specifically, we examine whether host-country institutions constrain the foreign direct investment (FDI) ownership mode choice (OMC) of an international joint venture (IJV) through the host-country national cultural dimension of indulgence-restraint (IR). By integrating the transaction cost economics (TCE) and institutional theories, we propose that the effects of opportunism and bounded rationality on TCE's predictions of FDI OMC are stronger in indulgent host countries than in restraint host countries, and thus the relationships between transaction-cost attributes of an FDI project and the FDI OMC of an IJV are enhanced in a high indulgence host-country context. Using cross-sectional data from 431 outward FDI projects conducted by Chinese manufacturing firms between 2006 and 2008, our empirical results strongly support our theoretical arguments. We find that (1) the negative relationships between a parent firm's R&D intensity/host-country experience and the FDI OMC of an IJV and (2) the positive relationship between host-country political risk and the FDI OMC of an IJV, are stronger in indulgent host countries than in restraint host countries. We also find insignificant direct effect of the host-country national cultural dimension of IR on the FDI OMC of an IJV.

2.2 Introduction

Foreign direct investment (FDI) ownership mode choice (OMC) between an international joint venture (IJV) and a wholly foreign-owned enterprise (WFOE) is an important issue in international business (Shaver, 2013), and national culture is widely considered to have an important influence on it (Brouthers, 2002). Multinational enterprises (MNEs) from a low power distance culture show a higher trust propensity and more willingness to cooperate in IJVs, while MNEs from a high power distance culture often prefer the WFOE mode or other high control modes to centralise decision-making authority (Brouthers & Brouthers, 2003; Makino & Neupert, 2000; Morschett, Schramm-Klein, & Swoboda, 2010; Shane, 1993). MNE managers from an individualism culture show a stronger desire for a clear boundary of accountability in managing subsidiaries than those from a collectivism culture, and therefore they are reluctant to work in IJVs where roles and responsibilities of partnering firms sometimes overlap (Jung & Suh, 2013). MNE managers from a high uncertainty avoidance culture also prefer a majority ownership mode for foreign subsidiaries so that they can control more effectively, because coping with foreign partners is often fraught with uncertainty (Erramilli, 1996; Makino & Neupert, 2000). MNEs are also more likely to maintain a high resource commitment in a long-term oriented market, since investment risk is relatively low in such a cultural context (Peng & Beamish, 2014). Apart from the impact of those single national cultural dimensions identified by Hofstede (1980), the cultural distance between the host country and the home country may also affect the uncertainty associated with the IJV mode and the WFOE mode, respectively. In a cultural distant market, internal uncertainty associated with the IJV mode is comparatively

high because of MNEs' difficulties in monitoring local employees, while external uncertainty associated with the WFOE mode is comparatively high due to MNEs' difficulties in understanding the local environment (Slangen & Van Tulder, 2009). A few studies also explore the impact of other national cultural components such as integration (Shane, 1994), investment risk and market potential (Brouthers, 2002) on international entry mode choice (include but not limited to FDI OMC). Among the six cultural dimensions identified by Hofstede (2011) - power distance, individualism-collectivism, masculinity-femininity, uncertainty avoidance, long-term orientation and indulgence-restraint (IR) - the impact of IR on FDI OMC of an IJV has rarely been examined, which is the research gap that we intend to fill in this paper.

From an institutional view, the host-country national cultural dimension of IR may shape local stakeholders' behavioural patterns and MNEs' cognitions, in terms of opportunism and/or bounded rationality. Opportunism refers to "self-interest seeking with guile… [which] includes but is scarcely limited to more blatant forms, such as lying, stealing, and cheating… [Opportunism] involves subtle forms of deceit" (Williamson, 1985). Bounded rationality refers to economic actors' behaviours that are "intended rational, but only limitedly so" (Simon, 1961), due to their limited capability of acquiring and processing information (Williamson, 1975). IR is defined as the extent to which people in a society try to control their "gratification (s) of basic and natural human desires related to enjoying life and having fun" (Hofstede, 1991). It reflects a society's belief that the gratification of human desires has to be restrained and ruled by stringent social norms and values such as moral disciplines, thrift and maintaining order in the nation (Hofstede et al., 2010). Opportunism is widely treated as an immoral or guileful behaviour (Matthews,

1990). In a restraint culture, social sanctions for enforcing moral disciplines can drive up the costs of opportunistic behaviours. Therefore, we propose that the effect of opportunism on TCE's predictions of FDI OMC is weaker in a restraint culture than in an indulgent culture. Thrift is often considered a valuable trait in a restraint culture (Akdeniz & Talay, 2013). This social value may mitigate local employees' latitudes in relishing leisure.

Local employees' propensity to deviate from their contractual obligations to an MNE is affected by their latitudes in leisure or money spending at work, and hence social appraisals for thrift can reduce such latitudes and thus their propensity to deviate from contractual obligations. Thus, we propose that the effect of bounded rationality on MNEs' difficulties in monitoring local employees is mitigated in a highly restraint culture. Maintaining order in the nation is also given a much higher priority in a restraint culture than in an indulgent culture. This social norm reduces the frequency that MNEs have to adjust their contracts in response to environmental volatility. Hence, we propose that the effect of bounded rationality on MNEs' difficulties in responding to environmental shifts is also weaker in a highly restraint culture.

Opportunism and bounded rationality are the two main behavioural assumptions of transaction cost economics (TCE) (Williamson, 1985), which is one of the fundamental theories in explaining FDI OMC (Brouthers, 2002). TCE explain how firms choose an efficient governance mode (e.g., ownership mode) to minimise transaction costs arising from the interactions between the behavioural assumptions of opportunism and bounded rationality, and the transaction-cost attributes of asset specificity, uncertainty and frequency (Williamson, 1991). TCE suggest that all contracts are considered to be

incomplete due to bounded rationality and need to be monitored and enforced due to opportunism (Henisz & Williamson, 1999). With the effect of opportunism and bounded rationality being held constant, conventional transaction cost-based FDI OMC studies suggest that factors that cause high (internal or external) uncertainty will lead to an MNE's OMC of the IJV mode since a low control mode is more efficient in MNEs' monitoring local employees and responding to environmental volatility with the help of local partners, while factors that cause high asset specificity will lead to an MNE's OMC of the WFOE mode because a high control mode is more efficient in reducing opportunism induced by transaction-specific assets (Zhao, Luo, & Suh, 2004). The frequency of transactions is widely considered unrelated to FDI OMC (Brouthers & Hennart, 2007). That is to say, the effects of opportunism and/or bounded rationality can enhance (1) the negative relationship between asset specificity of an FDI project and the FDI OMC of an IJV and (2) the positive relationship between uncertainty of an FDI project and the FDI OMC of an IJV. Therefore, as we discussed in the previous paragraph, since the effects of opportunism and bounded rationality on TCE's predictions of FDI OMC are stronger in an indulgent culture than in a restraint culture, we propose that (1) the negative relationship between asset specificity of an FDI project and the FDI OMC of an IJV and (2) the positive relationship between uncertainty and the FDI OMC of an IJV, are stronger in an indulgent culture than in a restraint culture.

This study contributes to two strands of literature. First, from a perspective of host-country institutions, we contribute to the literature on the FDI OMC of an IJV (Brouthers & Hennart, 2007). We expand the existing literature by exploring the institutional impact of the host-country national cultural

dimension of IR on the FDI OMC of an IJV. Second, we contribute to the TCE literature (Williamson, 1985). Our theoretical extensions explain why and how the host-country national cultural dimension of IR may constrain the effects of opportunism and bounded rationality on TCE-based predictions.

This study may also provide new managerial and policy implications. For MNE managers, this research may indicate that transaction costs associated with FDI OMC are different between indulgent- and restraint host-country cultures and therefore in which host-country culture should MNE managers pay more attention to transaction costs induced by asset specificity, internal uncertainty or external uncertainty of an FDI project in their FDI ownership decision making, because FDI OMC with lower transaction costs often result in better performance of the FDI project (Brouthers, 2002; Brouthers et al., 2003). For policymakers, this research may also suggest in which host-country culture should the local government spends more efforts on protecting transaction-specific FDI projects from local firms' exploitations.

The rest of this essay is organized as follows. In the next section, we summarise the existing literature on the FDI OMC and address the research gap that we intend to fill in this study. This is followed by the development of hypotheses. Then we report our research methods and empirical results. Finally, we discuss the main contributions, future research directions and implications of our study for both research and practice.

2.3 Literature review

FDI OMC is part of a firm's FDI ownership mode strategy (Hennart & Slangen, 2014). FDI OMC is among the most important topics in international business study (Shaver, 2013). FDI ownership mode strategy decides whether

a firm's foreign subsidiaries adopt the IJV mode or the WFOE mode. A firm can implement this strategy at the time of its foreign entry or in its post-entry periods. FDI OMC refers to a firm's ownership mode strategy at the time of its foreign entry. Existing research suggests that two principal factors may influence a firm's FDI OMC: transaction-cost factors and institutional factors. On one hand, transaction-cost analyses propose that an MNE's FDI OMC depends on the costs and benefits of the IJV mode relative to those of the WFOE mode (Hennart, 1991b). MNEs choose the ownership mode, which minimises their FDI costs (Taylor, Zou, & Osland, 1998). By building on and modifying Williamson's transaction cost paradigm, most transaction cost-based FDI OMC studies suggests that factors which cause high (internal or external) uncertainty will lead to the FDI OMC of an IJV while factors which cause high asset specificity will lead to the FDI OMC of a WFOE (Zhao et al., 2004). Also, by using Hennart's (2009) transaction cost approach, transaction cost-based FDI OMC literature also indicates that factors enhancing an MNE's access to local complementary inputs or assets may discourage the FDI OMC of an IJV (Hennart, Sheng, & Pimenta, 2015). On the other hand, institutional analyses suggest that the FDI OMC of an IJV relies on the institutional pressures imposed on the IJV mode relative to the WFOE mode (Yiu & Makino, 2002). Institution-based FDI OMC research is often based on Scott's (1995b) or North's (1990) institutional frameworks and proposes that MNEs should enter a foreign market via the ownership mode which faces weaker institutional pressures (Lu, 2002). Those institutional pressures can be formal or informal, and they can come from the host country or the home country (Puck et al., 2009). In addition, existing studies also tries to explain a firm's international entry mode choice (include

but not limited to FDI OMC) based on resource-based view, OLI paradigm or internationalisation theory. Resource-based view's main argument is that a firm's sustainable competitive advantages are determined by its firm-specific resources and capabilities, which are valuable, rare, difficult to copy and non-substitutable (Barney, 1991; Wernerfelt, 1984). Resource-based entry mode studies suggest that a firm's possession of greater resource-based advantages should enter a foreign market with a higher level of internalisation, which can protect and maximise its resource-based advantages (Dev, Erramilli, & Agarwal, 2002; Ekeledo & Sivakumar, 2004; Erramilli, Agarwal, & Dev, 2002; Tan, Erramilli, & Liang, 2001). OLI paradigm mainly argues that a firm's international business strategy is determined by its ownership advantages, location advantages and/or internalisation advantages (Dunning & Lundan, 2008). OLI-based entry mode research often consider OLI paradigm as an effective way to combine insights from resource-based view (ownership advantages), institutional theory (location advantages), and transaction cost theory (internalisation advantages) (Agarwal & Ramaswami, 1992; Anand & Delios, 1997; Brouthers & Hennart, 2007; Erramilli, Agarwal, & Kim, 1997). Internationalisation theory's basic argument is that a firm's internationalisation is a slow and progressive process, and its commitments to foreign markets increase with its knowledge about foreign markets and operations, which it learns in its internationalisation process (Johanson & Vahlne, 1977). Internationalisation theory-based entry mode literature mainly focuses on a firm's accumulation of international experience and suggests a general U-shaped relationship between a firm's international experience and its level of integration in an foreign entry (Aulakh & Kotabe, 1997; Cho & Padmanabhan, 2001; Delios & Henisz, 2000; Erramilli, 1991). Important

theoretical frameworks related to the FDI OMC of an IJV are listed below in Table 1.

Table 1 Important theoretical frameworks related to the FDI OMC of an IJV

Author(s)	Theory/paradigm	Main arguments
(Barney, 1991; Wernerfelt, 1984)	Resource-based view	A firm's sustainable competitive advantages are determined by its firm-specific resources and capabilities, which are valuable, rare, difficult to copy and non-substitutable.
(Dunning & Lundan, 2008)	OLI paradigm	A firm's international business strategy is determined by its ownership advantages, location advantages and/or internalisation advantages.
(Johanson & Vahlne, 1977)	Internationalisation theory	A firm's internationalisation is a slow and progressive process, and its commitments to foreign markets increase with its knowledge about foreign markets and operations, which it learnings in its internationalisation process.
(North, 1990; Scott, 1995a)	Institution theory	Institutions (1) establish incentives and business practices that influence an organisation's strategy making and (2) shape an organisation's abilities to implement strategies.
(Williamson, 1975, 1985)	Transaction cost theory	The costs of searching for, negotiating, and securing an agreement determines the governance structure of the agreement.

In particular, national culture is often considered as an important transaction-cost or institutional determinant of international entry mode choice (Brouthers & Hennart, 2007). Hofstede's cultural dimensions are often used to examine how national culture influences an MNE's FDI ownership strategy. Erramilli (1996), Makino and Neupert (2000) and Morschett (2010) suggest that, power distance acceptance in the home country is positively associated with an MNE's propensity to enter via the WFOE mode or other high control modes, because MNEs from a high power distance culture prefer high control modes to centralise decision-making authority while MNEs from a low power distance culture show higher trust propensity and more willingness to cooperate. However, Brouthers and Brouthers (2003) suggest that this relationship is significant for service firms but insignificant for manufacturing firms, while Hennart and Larimo (1998) suggest that this relationship is insignificant. Instead, Shane (1993) focuses on the impact of host-country

power distance and find that host-country power distance positively affects an MNE's propensity to enter through the WFOE mode or other high control modes, because such a culture is characterised by low interpersonal trust and MNE managers perceive high transaction costs in managing IJVs. Erramilli (1996) and Makino and Neupert (2000) also find that MNE managers from a high uncertainty avoidance culture prefer majority ownership or sole ownership for their foreign subsidiaries so that they can control more effectively. Brouthers and Brouthers (2003) suggest that this relationship is significant for manufacturing firms but insignificant for service firms, while Hennart and Larimo (1998) suggest that this relationship is insignificant. Jung and Suh (2013) propose that, individualism in the home country is negatively associated with the FDI OMC of an IJV, since the roles and responsibilities of partnering firms sometimes overlap in IJVs and managers from an individualism culture often show a stronger desire for a clear boundary of accountability in managing subsidiaries than those from a collectivism culture. Peng and Beamish (2014) advocate that MNEs' ownership levels are positively associated with host-country long-term orientation, because uncertainty becomes comparatively low in long-term oriented societies and hence MNEs are more willing to maintain a high resource commitment. The masculinity-femininity dimension is often used in calculating the cultural distance between host and home countries in FDI OMC literature (Kogut & Singh, 1988). The cultural distance between the host and home country is often considered to reflect internal uncertainty associated with the IJV mode and external uncertainty associated with the WFOE mode (Slangen & Van Tulder, 2009). Therefore, some studies suggest that cultural distance positively affects an MNE's propensity to enter through the IJV mode or other

low control modes (Hennart & Larimo, 1998; Yiu & Makino, 2002; Zhao et al., 2004), some studies suggest that cultural distance negatively affects an MNE's propensity to enter through the IJV mode or other low control modes (Barkema & Vermeulen, 1997) and others suggest that the impact of cultural distance is insignificant (Erramilli & Rao, 1993). Apart from exploring the impact of Hofstede's national cultural dimensions on a firm's international entry mode, a few other studies also explore the impact of other national cultural components such as integration (Shane, 1994), investment risk and market potential (Brouthers, 2002). Important empirical findings of national culture-related international entry mode research are listed below in Table 2. Specifically, Hofstede's (2011) sixth cultural dimension of IR draws little attention from national culture-related international entry mode literature.

Table 2 Important empirical findings of national culture-related international entry mode choice

Author(s)/ year	Focus	Theoretical framework	Level of analysis	Home country	Host country	Main findings
National culture and FDI ownership mode choice						
(Barkema & Vermeulen, 1997)	Cultural distance	-	Firm	Nerthlands and U.K.	Multiple	Differences between host and home countries in power distance, individualism-collectivism and masculinity positively affects an MNE's propensity to choose the IJV mode of entry (compared to the WFOE mode of entry), while differences in uncertainty avoidance and long-term orientation negatively affects the likelihood of the IJV mode of entry.
(Brouthers, 2002)	Host-country Investment risk and market potential	Transaction cost and institution	Firm	Europe	Multiple	Host-country investment risk negatively affect an MNE's propensity to enter via the WFOE mode (compared with the IJV mode), while the impact of host-country market potential is insignificant.
(Brouthers & Brouthers, 2003)	Home-country power distance and uncertainty avoidance	Transaction cost	Firm	Netherands, germany and U.K.	Central and east europe	Home-country power distance only negatively affects the likelihood of service MNEs' OMC of a WFOE (compared with an IJV), while home-country uncertainty avoidance only positively affects the likelihood of manufacturing MNEs' OMC of a WFOE (compared with an IJV).
(Hennart & Larimo, 1998)	Cultural distacne, home-country power distance and uncertainty avoidance	Transaction cost	Firm	Japan and Finland	U.S.	Cultural distance positively affects an MNE's propensity to enter via the IJV mode (compared with the WFOE mode), while the impact of home-country power distance or uncertainty avoidance is insignificant.

Jung and Suh (2013)	Home-country individualism-collectivism	Grounded theory	Firm	Japan and U.S.	Japan and U.S.	Individualism in the home country is negatively associated with OMC of the IJV mode, since the roles and responsibilities of partnering firms sometimes overlap in IJVs and managers from an individualism culture often show a stronger desire for a clear boundary of accountability in managing subsidiaries than those from a collectivism culture
(Makino & Neupert, 2000)	Home-country Power distance and uncertainty avoidance	Transaction cost	Firm	Japan and U.S.	Japan and U.S.	Home-country power distance and uncertainty avoidance positively affect an MNE's propensity to choose the WFOE mode of entry (compared with the IJV mode).
(Shane, 1993)	Host-country power distance	Transaction cost	Firm	U.S.	Multiple	Host-country power distance negatively affects the likelihood of the establishment of IJVs (compared with WFOEs), because high power distance is associated with low interpersonal trust which may cause difficulties in managing an IJV and a preference for control.
(Yiu & Makino, 2002)	Cultural distance	Transaction cost and institution	Firm	Japan	Multiple	Cultural distance positive affects an MNE's propensity to choose the IJV mode of entry (compared with WFOE).
National culture and other FDI entry mode choice						
(Erramilli & Rao, 1993)	Cultural distance	Transaction cost	Firm	U.S.	Multiple	The moderating effect of cultural distance on the relationship between asset specificity and an MNE's OMC is insignificant.
(Erramilli, 1996)	Home-country power distance and uncertainty avoidance	-	Firm	Europe and U.S.	Europe	Home-country power distance positively affects an MNE's propensity to choose majority ownership in FDI. MNEs from a high uncertainty avoidance culture also prefer majority ownership for their foreign subsidiaries where they can control more effectively.
(Kogut & Singh, 1988)	Home-country Uncertainty avoidance and cultural distance	-	Firm	Multiple	U.S.	Home-country uncertainty avoidance and the cultural distance between the host and home country positively affects an MNE's propensity to enter via greenfield investment (compared with acquisition).
(Morschett et al., 2010)	Home-country power distance	Transaction cost, institution and real option	Firm	Multiple	Multiple	Power distance acceptance in the home country is positively associated with an MNE's WFOE mode of foreign entry, because MNEs from a high power distance culture prefer the WFOE mode to centralise authority and decision-making authority while MNEs from a low power distance culture show higher trust propensity and more willingness to cooperate.
(Peng & Beamish, 2014)	Host-country long-term orientation	Transaction cost and transaction value	Firm	Japan	Multiple	MNEs' ownership levels are positively associated with host countries' long-term orientation, because uncertainty becomes comparatively low in long-term oriented societies and hence MNEs are more willing to maintain a high resource commitment.
(Shane, 1994)	Host-country power distance and integration	Transaction cost	Industry	U.S.	Multiple	High host-country power distance and low host-country integration positively affects the likelihood of entry via FDI over licensing, because such a culture is characterised by low interpersonal trust and MNE managers perceive high transaction costs in business.

(Zhao et al., 2004)	Cultural distance	Transaction cost	Firm	Multiple	Multiple	Cultural distance negatively affects the likelihood of ownership-based entry mode.

Prior cultural studies indicate that the systems of collected values and norms are different between indulgent and restraint cultures (Minkov, 2007). First, an indulgent culture considers moral disciplines less important in constraining human behaviours than a restraint culture (Hofstede et al., 2010). Moral disciplines can drive up the costs of opportunistic behaviours because opportunism is often considered immoral or guileful (Matthews, 1990). Therefore, the costs of opportunistic behaviours are lower in an indulgent culture than in a restraint culture. Second, an indulgent culture gives more weight to leisure and spending money, while a restraint culture regards it to be a waste of time to pursuit happiness and this culture praises thrift (Akdeniz & Talay, 2013). Employees from an indulgent culture may become less comfortable with intensive work and hence may shirk, while employees from a restraint culture are more comfortable with tough jobs because working hard is highly praised in their societies. Hence, employees from an indulgent culture are less likely to adhere to their contractual obligations to MNEs than those from a restraint culture. For instance, managerial apprentices from an indulgent culture such as the United States show a higher propensity of free ride than those from a restraint culture such as China (Earley, 1989). Third, the indulgent culture considers it less important to maintain order in the nation than the restraint culture (Hofstede et al., 2010). Governments of indulgent cultures, such as Columbia (Hiatt & Sine, 2014), tend to put less time and efforts in controlling political and criminal risks than those of restraint cultures. As a result, political or criminal risks are more likely to run out of control in an indulgent culture.

Those beliefs, which may or may not be evidenced by empirical results, shape the behavioural patterns of local stakeholders and MNEs' cognitions, and hence the FDI OMC of an IJV. We therefore argue that these beliefs, and hence local firms' opportunistic propensity in indulgent and restraint cultures, apply to their joint venturing with MNEs. Host-country IJV partners from an indulgent culture are more likely to take advantage of MNEs' dependency on them and exploit those MNEs, compared with those from a restraint culture. When starting a new foreign subsidiary, MNEs may also find local employees more likely to deviate from their contractual obligations in an indulgent culture than in a restraint culture. In addition, environmental uncertainty is probably more salient in indulgent societies and hence the role of local partners in MNEs' risk management. Existing literature connects national culture with entry mode strategy and contributes to our understanding of how national cultural dimensions in terms of power distance, individualism-collectivism, uncertainty avoidance or long-term orientation influence a firm's entry mode choice, but not of how national culture in terms of IR affects a firm's entry mode choice, which is the research gap we intend to fill in this study.

In the following, we develop the rationale for the influence of the host-country cultural dimension of IR on a firm's FDI OMC, as illustrated on the next page in Figure 1.

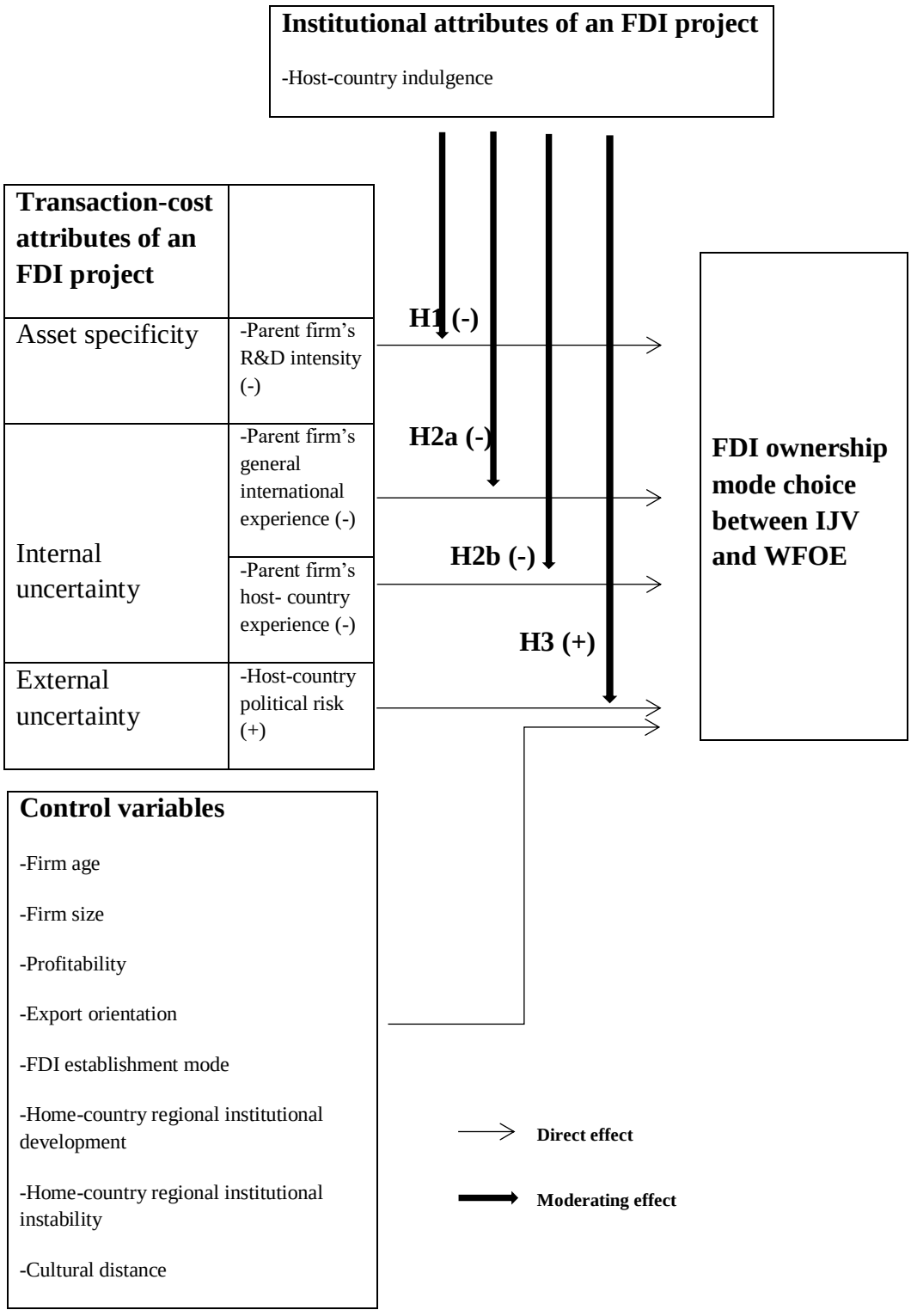

Figure 1 Research model of chapter 2

2.4 Hypothesis development

The IR dimension addresses a society's happiness or subjective well-being. The indulgence-restraint dimension measures the extent to which people in a society try to control their "gratification (s) of basic and natural human

desires related to enjoying life and having fun" (Hofstede, 1991). Restraint reflects a society's belief that the gratification of human desires has to be restrained and ruled by stringent social norms such as moral disciplines. As a result, a restraint culture relies heavily on moral disciplines to constrain human behaviours (Chakkarath, 2005). Since opportunism is widely considered immoral or guileful (Matthews, 1990), social sanctions for enforcing moral disciplines may drive up the costs of opportunistic behaviours. Reputation is an important way through which moral disciplines constrain human behaviours (Hau-siu Chow & Ding, 2002). Individuals whose reputation expects to be tarnished for acting opportunistically are likely to assign high costs to opportunism. Therefore, moral disciplines can mitigate opportunism and foster trust in transactions (Akrout, 2015). However, an indulgent culture allows a reasonably free gratification of human desires (Hofstede, 2010). Fewer moral disciplines are imposed on individuals in an indulgent culture (Hofstede et al., 2010) and hence fewer social sanctions for enforcing moral disciplines. Individuals may perceive low costs for acting opportunistically in an indulgent culture. For instance, managerial trainees from an indulgent culture such as the United States shows a higher propensity to free ride at work compared to those from a restraint culture such as China (Earley, 1989). Therefore, we propose that a restraint culture discourages opportunism in cooperative relations, while an indulgent culture encourages opportunism.

TCE suggest that the effect of opportunism becomes critical when there are transaction-specific assets (Williamson, 1996). Transaction-specific assets refer to investments that are dedicated to a specific partner and redeployment of the investments can cause substantial switching costs (Williamson, 1985),

such as investments in R&D and marketing (Shelanski & Klein, 1995). Due to such switching costs, an MNE will find it difficult to punish the partner when it acts opportunistically (Williamson, 1998). As a result, the partner can exploit an MNE by shirking, free-riding or technology dissemination (Brouthers, 2002). In this situation, the FDI OMC of an IJV may expose an MNE to the local partner's opportunistic behaviours, while the FDI OMC of a WFOE can efficiently mitigate potential behavioural hazards by substituting joint control with full control (Henisz, 2000). Therefore, partial internalisation by using the IJV mode is considered less efficient than full internalisation by using the WFOE mode. Williamson (1991) uses the concept asset specificity to describe the extent to which an investment is dedicated to a particular partner. The higher the asset specificity of an investment is, the higher the switching costs are expected to be. Therefore, TCE-based FDI OMC studies suggest a negative relationship between the asset specificity of an FDI project and the likelihood of the FDI OMC of an IJV (Zhao et al., 2004). However, TCE propose on FDI OMC that "a low level of ownership is preferable until proven otherwise" (Anderson & Gatignon, 1986), due to the higher resource commitment and hence the exit costs with the WFOE mode than with the IJV mode. When risk of the host-country IJV partner's opportunism is reduced, its propensity to exploit its foreign IJV partners is expected to be reduced. As a result, the need for an MNE to fully internalize a foreign subsidiary is reduced. With the reduced effect of opportunism, the impact of asset specificity of an FDI project on a firm's FDI OMC is expected to be weakened, and vice versa. As we discussed in the previous paragraph, economic actors from an indulgent culture are more likely to act opportunistically than those from a restraint culture. Thus, we propose

Hypothesis 1. The negative effect of asset specificity of an FDI project on the probability of choosing an IJV (as opposed to a WFOE) foreign market entry mode is strengthened in the presence of a high indulgence (as opposed to restraint) host-country culture.

TCE also suggest that uncertainty is another important factor that determines a firm's FDI OMC (Gatignon & Anderson, 1988). In this theoretical paradigm, uncertainty can be internal or external. Internal uncertainty refers to the degree of difficulty faced by one party, due to bounded rationality or opportunism, in ascertaining the extent to which its agents have carried out contractual obligations, or performed under a pre-specified agreement (Dutta, Bergen, Heide, & John, 1995). When internal uncertainty is high, an MNE often has to impose subjective assessment and monitor its employees' inputs rather than judging their outputs (Anderson & Gatignon, 1986). An MNE also has to provide various incentives to achieve goal congruence and foster loyalty to encourage its employees to fulfil their obligations according to the pre-specified agreement. However, firms new to FDI often find high uncertainty internal to its foreign affiliates because they lack experience in monitoring their local employees' performance in a foreign context. Also, due to a lack of experience in managing in a foreign market, they are unlikely to overcome such internal uncertainty on their own. Therefore, new MNEs tend to share control of their foreign affiliates with local partners and delegate management of their foreign affiliates to the local partner (Padmanabhan & Cho, 1996), because the local partner has the better knowledge in managing local employees. Although joint venturing with local firms may also subject an MNE to difficulties in monitoring its local partner's performance (Lin, Peng, Yang, & Sun, 2009), inexperienced MNEs

often have few alternative choices. Previously, some firms tried to exert control without sufficient knowledge of how to control, and they made fatal mistakes and impaired their operation efficiency (Teece, 1976). To share control with experienced local partners is a more efficient choice than to maintain high control for inexperienced firms, especially in an international setting (Chang, 1995).

However, MNEs can learn to manage in a foreign market from their past international investments (Contractor & Kundu, 1998). We define general international experience as an MNE's experiential knowledge gained from past investments in foreign markets. Those experiences can enhance an MNE's understanding and perception of how to manage their foreign subsidiaries and hence their abilities to cope with uncertainty internal to their foreign subsidiaries (Dow & Larimo, 2009). An MNE may also learn how to assess whether its employees in the foreign affiliate are working responsibly and coherently from its general international experience, and therefore uncertainty internal to an MNE's foreign affiliates is also reduced. With reduced internal uncertainty and stronger abilities to overcome potential uncertainty internal to foreign subsidiaries, experienced MNEs become more confident of taking control and risk of their foreign subsidiaries on their own (Root, 1982). By using the WFOE mode instead of the IJV mode for a foreign subsidiary, an MNE can also avoid problems associated with monitoring host-country IJV partners (Reuer, Klijn, & Lioukas, 2014).

As we discussed in developing Hypothesis 1, in an indulgent culture people are more likely to act opportunistically in business relations. People in indulgent cultures also have strong desires to enjoy leisurely activities and

spend money (Costa, Crawford, & Jakob, 2013), while people in restraint cultures disdain entertainment and regard thrift as a valuable characteristic (Akdeniz & Talay, 2013). We expect that employees from an indulgent culture have a considerable latitude to follow their preferences at work, such as budget-breaking. When conflicts occur between contractual obligations and local employees' personal preferences, such as an assignment to local employees is highly demanding, employees from an indulgent culture may act opportunistically by shirking or free-riding. Hence, employees from an indulgent culture tend to deviate from their agreement with MNEs. In contrast, since in a restraint culture people may scorn leisure and consider thrift as a precious trait, they adhere to their obligations to the MNE and put work efficiency in the first place. As a result, for inexperienced MNEs, the local partner's knowledge and abilities in monitoring local employees are more in need in an indulgent culture than in a restraint culture. Thus, we propose

Hypothesis 2a. The negative effect of general international experience on the probability of choosing the IJV (as opposed to the WFOE) foreign market entry mode is strengthened in the presence of a high indulgence (as opposed to restraint) host-country culture.

However, some country-specific experience that an MNE gains from one market may apply in the next market, such as language, culture or politics. Host-country experience not only enhances an MNE's general ability to monitor market transactions in foreign countries, but also sharpens its understanding of business rules and norms in a specific host country context. As a result, some studies suggest that host-country experience is more

helpful than general international experience for an MNE to reduce and overcome uncertainty internal to its foreign affiliates (Dow & Larimo, 2009). Thus, we define host-country experience as an MNE's experiential knowledge acquired from past investment in one specific host country and propose

Hypothesis 2b. The negative effect of host-country experience on the probability of choosing the IJV (as opposed to the WFOE) foreign market entry mode is strengthened in the presence of a high indulgence (as opposed to restraint) host-country culture.

Apart from internal uncertainty, MNEs also faces uncertainty external to their foreign subsidiaries (Palenzuela & Bobillo, 1999). External uncertainty refers to the unpredictability of a firm's environment (Milliken, 1987), including fast changing political, macroeconomic, social, demographic, regulatory and technological factors. Since a firm's rationality is bounded, it cannot predict all environmental shifts and secure its benefits by contracts. Host-country political risk is often considered an important uncertainty external to a foreign affiliate in FDI OMC studies (Agarwal & Ramaswami, 1992). We define political risk as the "risk or probability of occurrence of some political events that will change the prospects" of an investment, following Haendel, West and Meadow (Haendel, West, & Meadow, 1975). Operating in a volatile political environment, MNEs have to make quick and accurate responses (Miller, 1992), because any firm strategy incompatible with the shifts in a political environment may reduce their operating efficiency or even result in investment failure. Therefore, MNEs may share investment risks with local partners in politically unstable countries (Delios

& Henisz, 2000). In their adaptation to local political turmoil, MNEs often have to suffer considerable sunk costs, because their resource commitment to one operation may turn out incompatible to the next political shifts (Hill, Hwang, & Kim, 1990). As a result, MNEs also tend to maintain a low resource commitment and hence flexibility in divestment. Local partners are also more familiar with the local political environment and have political connections to help MNEs deal with political uncertainty (Puck et al., 2009).

Indulgent and restraint societies give different priorities to maintain order in the nation. Restraint societies often give higher priority to maintaining order in the country than restraint societies (Hofstede et al., 2010). Therefore, we expect governments of restraint societies will commit more time and effort to control political risk. In contrast, governments of indulgent cultures may fail to maintain order and control domestic political risk, such as Columbia, which would create high uncertainty for local business (Hiatt & Sine, 2014). Political risk is more likely to run out of control in indulgent cultures than in restraint cultures. As a result, in their response to host-country political risk, there is an increasing need for MNEs to keep a low resource commitment and share the risk with outsiders in an indulgent culture than in a restraint culture. Thus, we propose

Hypothesis 3. The positive effect of host-country political risk on the probability of choosing an IJV (as opposed to WFOE) foreign market entry mode is strengthened in the presence of a high indulgence (as opposed to restraint) host-country culture.

At last, we will discuss the potential direct effect of the national cultural dimension of IR on the FDI OMC of an IJV. As we discussed before,

economic actors from an indulgent culture are more likely to act opportunistically than those from a restraint culture. Such behavioural uncertainties drive manufacturing firms to seek control in FDI (Brouthers & Brouthers, 2003). However, we also mentioned before that employees from indulgent cultures may have a greater latitude to follow their preferences at work than those from restraint cultures. "Different types of human resources require a variety of structures to achieve their full potential" (Estrin, Baghdasaryan, & Meyer, 2009), and such managing difficulties may encourage firms to delegate control to local partners in FDI, since local partners are more familiar with managing local employees. Given the opposing effects discussed above, we control for the direct effect of the host-country national cultural dimension of IR in our analyses.

2.5 Data and Methodology

Data and sample

In this study, the hypotheses are tested in FDI conducted by Chinese manufacturing firms. Data for foreign affiliates is collected from a firm-level dataset from the Chinese Ministry of Commerce, including basic information on Chinese firms' 5819 FDI activities up to 2012 (FDI DATA). This dataset contains information such as the parent firm's name, four-digit industry code, locations, and legal person code, and the foreign affiliate's name, location, and the year for the FDI project approval. Additional data for parent firms is collected from the Annual Report of Industrial Enterprise Statistics (ARIES) 1998-2007, compiled by the Chinese National Bureau of Statistics. It covers around 90% of gross output in most industries with firms with annual sales of at least five million RMB. This dataset contains information of the parent firm

such as the register code, the controlling shareholder, ownership structure, total assets, annual sales, R&D expenditure, advertising expenditure, intangible assets, report year, and legal person code. According to their ownership structure, we separate firms from mainland China and those from outside mainland China. According to the industry codes of parent firms, we separate manufacturing firms from other firms. With a unique combination of the foreign affiliate's year of establishment and the parent firm's legal person code, we merge the two datasets. ARIES only includes firms with annual sales of at least five million RMB in our sample. Therefore, our empirical tests may only explain the FDI OMC of relatively large Chinese firms. Despite this limitation, these two datasets have been previously used to study Chinese firms' FDI behaviours such as Wang, Hong, Kafouros and Wright (2012) and provide reliable empirical insights.

As the information about a foreign affiliate's ownership mode and establishment mode is not available in the data collected from the Chinese Ministry of Commerce, we have completed the dataset by hand-collecting such information from parent firms' annual reports (Meyer et al., 2014), and online business news of parent firms or foreign subsidiaries (Wei, Zheng, Liu, & Lu, 2014). For those observations where the foreign affiliate's year of establishment is missing, we use the year in which the FDI project is approved by the Chinese government instead. As for the ownership mode, following earlier studies such as Slangen and Van Tulder (2009), if the information source states there is at least one host-country firms with equity investment in the foreign affiliate, this subsidiary is coded as an IJV. If the information source states the foreign subsidiary is fully owned by the parent firm, this subsidiary is coded as a WFOE. As for the establishment mode, following

earlier studies such as Meyer et al. (2014), a foreign affiliate is coded as an acquisition if it is acquired from a host-country firm, and as a greenfield if it is newly established. As for hand-collected information, there is the possibility of coding mistakes such as coding an IJV as a WFOE. Hence, to reduce the impact of coding mistakes on our empirical tests, we have double checked the information source for coding mistakes.

Table 3 List of host countries and the number of FDI projects

Host country	Number of FDI	Host country	Number of FDI
Algeria	1	Madagascar	1
Argentina	3	Malaysia	5
Australia	18	Mauritius	1
Bangladesh	4	Mexico	3
Belgium	1	Mongolia	1
Brazil	7	Morocco	1
Cambodia	4	Myanmar	1
Cameron	1	Namibia	1
Canada	11	Netherlands	8
Chile	3	Niger	2
Congo, Dem. Rep.	2	Nigeria	5
Cuba	1	Pakistan	5
Denmark	1	Panama	1
Egypt	3	Peru	1
Ethiopia	10	Philippines	1
France	6	Poland	1
Gabon	1	Romania	2
Germany	25	Russia	31
Ghana	2	Singapore	7
Greece	1	South Africa	7
Guatemala	2	Spain	4
Hungary	2	Sri Lanka	1
India	17	Sweden	1
Indonesia	9	Switzerland	1
Iran	2	Syria	2
Ireland	1	Tajikistan	1
Italy	7	Thailand	6
Japan	12	Turkey	4
Jordan	1	Uganda	1
Kazakhstan	2	Ukraine	3
Kenya	1	United Kingdom	10
Korea, Dem. Rep.	6	United States	69
Korea, Rep.	25	Uzbekistan	1
Kuwait	2	Venezuela	1
Kyrgyzstan	2	Vietnam	35
Lao	8	Zimbabwe	3
		Total	431

Following Elango and Pattnaik (2007), we set a one-year lag for data to measure independent variables to control for the potential endogeneity problem. Then we exclude entities which invested in Hong Kong, Macao,

British Virgin Islands and the Cayman Islands, following Meyer et al. (2014), because entities which invested in the above areas often operate as holding corporations or financing companies for their businesses in other countries. Parent firms with equity held by foreign investors are also excluded. Since ARIES and FDI DATA are archival datasets, there may be unusable or unreliable observations such as observations with negative R&D expenditures. Therefore, we have checked for and removed unusable or unreliable observations. Then we have a sample of 431 observations for statistical analysis between 2006 and 2008. Due to missing values on independent variables, our final sample for regression analysis ranged from 372 to 392 observations. The list of host countries and the number of foreign affiliates in our sample are provided in Table 3. Measurements for variables are listed in Table 4.

When Hofstede's (2010) country-level scores is used for firm-level analysis, it is important to check whether between-country variations are large enough to justify further research or they may be artefacts due to between-firm variations (Rieger, Wang, & Hens, 2014). In this context, an analysis of variance (ANOVA) is commonly used to compare between-group- and within-group variations (Kirkman, Lowe, & Gibson, 2006). One-way parametric- and non-parametric ANOVA tests reveal significant between-country variations for the FDI OMC between an IJV and a WFOE ($F(71,430) = 1.37$, $p = 0.0362$; $Chi2(71) = 91.47$, $p = 0.0515$). Therefore, there is a significant cross-country variation that justifies further research.

Table 4 Variables and measurements of Chapter 2

Variables	Definition	Source
FDI ownership mode	A dummy variable is assigned a value of 1 if the foreign subsidiary is an IJV and 0 if it is a WFOE.	e.g. (Slangen & Van Tulder, 2009) source: FDI DATA
Asset specificity	The parent firm's R&D expenditures divided by total sales in year t-1.	e.g. (Brouthers, 2002; Gatignon & Anderson, 1988; Yiu & Makino, 2002) source: ARIES
General international experience	The difference between year t-1 and the year of the parent firm's first OFDI.	e.g. (Contractor & Kundu, 1998) Source: FDI DATA
Host-country experience	The difference between year t-1 and the year of the parent firm's first FDI in the same host country.	e.g. (Luo, 2001) Source: FDI DATA
Host-country political risk	1- an index assessing a host country's political stability and lack of violence in year t-1.	e.g. (Slangen & Van Tulder, 2009) Source: Worldwide Governance Indicators from the World Bank
Host-country indulgence	Logarithm of an index assessing the extent to which people in a host country try to control their gratifications of basic and natural human desires related to enjoying life and having fun in year t-1.	e.g. (Akdeniz & Talay, 2013) Source: (Hofstede et al., 2010)
Firm age	Logarithm of the difference between year t-1 and the parent firm's year of establishment.	e.g. (Xie, 2017). Source: ARIES and FDI DATA
Firm size	Logarithm of the parent firm's number of employees in year t-1	e.g. (Meyer, 2001). Source: ARIES
Profitability	The parent firm's net profits divided by total assets in year t-1.	e.g. (Meyer *et al.*, 2014). Source: ARIES
Export orientation	The parent firm's export sales divided by total sales in year t-1.	e.g. (Shi, Ho, & Siu, 2001). Source: ARIES
FDI establishment mode	A dummy variable is assigned a value of 1 if the FDI project is an acquisition and 0 if it is a greenfield investment.	e.g. (Nielsen & Nielsen, 2011). Source: FDI DATA
Home-country regional institutional development	The aggregated marketisation index of the province where the parent firm is located in year t-1.	e.g. (Shi et al., 2012). Source: Chinese NERI marketisation Index
Home-country regional institutional instability	The standard deviation of the *Home-country regional institutional development* during 1997 and 2007.	e.g. (Wu & Chen, 2014). Source: Chinese NERI marketisation Index

Cultural distance	A Euclidean distance index based on the scores of the China and each host country on Hofstede (1980)'s four dimensions of national culture (power distance, individualism, masculinity and uncertainty avoidance).	e.g. (Kogut & Singh, 1988) Source: (Hofstede, 1980)

2.6 Empirical results

Table 5 reports the descriptive statistics of our sample and the correlation matrix for the variables. We observe that the correlation between *Host-country political risk* and *Cultural distance* is relatively high at 0.45 and enter them separately in different models to avoid the potential multicollinearity problem.

Table 5 Descriptive statistics and correlation matrix of Chapter 2

Variables	N	Mean	s. d.	1	2	3	4	5	6	7	8	9	10	11	12	13
1.Asset specificity	431	0.01	0.02	1												
2.General international experience	431	0.30	0.84	0.20*	1											
3.Host-country experience	431	0.04	0.27	0.04	0.21*	1										
4.Host-country political risk	431	0.00	0.86	-0.02	-0.01	0.00	1									
5.Host-country indulgence	372	3.77	0.49	0.05	0.05	0.00	-0.38*	1								
6.Firm age	431	2.19	0.66	0.04	0.17*	-0.06	0.01	0.02	1							
7.Firm size	431	5.92	1.47	0.17*	0.25*	-0.05	0.07	0.02	0.45*	1						
8.Profitability	431	0.07	0.12	0.06	-0.01	-0.02	0.04	-0.03	-0.06	-0.04	1					
9.Export orientation	431	0.38	0.38	-0.13*	-0.05	-0.07	-0.04	0.01	-0.01	0.02	-0.10*	1				
10.Establishment mode	431	0.04	0.19	0.02	0.06	0.06	-0.09	0.04	0.13*	0.10*	0.00	0.02	1			
11.Home country regional institutional development	431	7.25	1.26	0.09	0.01	-0.04	-0.05	0.00	-0.02	-0.05	-0.13*	0.42*	0.04	1		
12.Home country regional institutional instability	431	0.77	0.13	-0.09	-0.15*	0.03	0.00	0.04	-0.02	-0.12*	-0.04	0.23*	-0.01	0.36*	1	
13.Cultural distance	392	2.86	0.86	-0.08	0.03	-0.01	-0.45*	0.14*	0.00	-0.08	-0.03	0.17	0.12*	0.05	0.06	1

*p<0.05

We employed Logit regression to estimate the model because the data is cross-sectional and the dependent variable is dichotomous. Table 6 reports the results with positive coefficients indicating a preference for the IJV mode and negative coefficients for the WFOE mode. To illustrate the patterns of the moderating effects that support the hypotheses, we also plotted the moderating effects using different levels of the moderating variable. Model 1 is the base model, which includes the control variables only. Model 2 reports the direct effects of transaction cost factors on the FDI OMC. The interaction effects of the transaction cost factors and host-country indulgence on FDI OMC are introduced in Models 3 to 6. The average VIF value of the variables included is 1.22, well below the threshold value of 10 for concerns of multicollinearity (Chatterjee & Hadi, 2015). Standard errors are clustered at the firm level to correct for potential heteroscedasticity. All the continuous independent variables are mean-centered before calculating the interaction terms, to minimise the potential for multicollinearity and make it easier to interpret the interaction effects (Yu, Jiang, & Land, 2015).

Dawson (2014) suggests that whether a moderating effect exists depends on the significance of the interaction term. The high and low levels of the moderating variable are calculated as the mean + standard deviation and mean – standard deviation respectively. The coefficient of *asset specificity* is negative and that of *asset specificity* × *host-country indulgence* is negative and significant ($p<0.05$) in Model 3 in Table 6. Following the method in Norton et al. (2004), we have also calculated the "correct interaction effect" and find that the values of the correct interaction effect range from -10.81 to 3.76, with a mean value of −3.82, and that the *z*-statistic values range from -

2.19 to 1.77, with only positive values of the correct interaction effect being significant (z<-1.96).

Table 6 Results of Logit models predicting the FDI OMC of IJV

Variables	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
Explanatory variables						
Asset specificity		-14.69	-21.37	-15.65	-13.78	-13.72
		(10.68)	(14.10)	(11.82)	(11.06)	(11.17)
General international experience		-0.42	-0.42	-0.43	-0.44	-0.38
		(0.33)	(0.34)	(0.35)	(0.35)	(0.33)
Host-country experience		-0.11	0.23	-0.09	-0.08	-0.16
		(0.90)	(0.76)	(0.90)	(0.70)	(0.85)
Host-country political risk		0.07	-0.05	-0.03	-0.02	0.06
		(0.25)	(0.27)	(0.27)	(0.27)	(0.22)
Moderator variables						
Indulgence		-0.06	-0.25	-0.06	-0.12	-0.43
		(0.36)	(0.39)	(0.38)	(0.36)	(0.36)
Interaction terms						
Asset specificity × Host-country indulgence			-42.37*			
			(20.46)			
General international experience × Host-country indulgence				0.06		
				(0.54)		
Host-country experience × Host-country indulgence					-2.50*	
					(1.23)	
Host-country political risk × Host-country indulgence						1.08*
						(0.53)
Control variables						
Firm age	0.54+	0.65+	0.65+	0.67*	0.70*	0.71*
	(0.31)	(0.34)	(0.34)	(0.34)	(0.33)	(0.34)
Firm size	-0.03	0.02	0.02	0.00	0.01	0.02
	(0.13)	(0.16)	(0.16)	(0.16)	(0.16)	(0.16)
Profitability	-0.02	-0.13	-0.12	-0.13	-0.17	-0.15
	(1.40)	(1.56)	(1.61)	(1.58)	(1.64)	(1.50)
Export orientation	-0.42	-0.81	-0.68	-0.69	-0.70	-0.77
	(0.53)	(0.57)	(0.55)	(0.55)	(0.55)	(0.58)
Establishment mode	1.73*	1.70*	1.90*	1.82*	1.93*	1.93*
	(0.81)	(0.84)	(0.86)	(0.86)	(0.83)	(0.81)
Home country regional institutional development	-0.49**	-0.38*	-0.41*	-0.40*	-0.40*	-0.42*
	(0.15)	(0.17)	(0.17)	(0.17)	(0.17)	(0.17)
Home country regional institutional instability	-2.29	-2.28	-2.09	-2.20	-2.22	-2.22
	(1.44)	(1.54)	(1.63)	(1.58)	(1.57)	(1.50)
Cultural distance	-0.35+		-0.25	-0.27	-0.26	
	(0.20)		(0.25)	(0.24)	(0.24)	
Constant	-2.11***	-2.03***	-2.08***	-2.07***	-2.08***	-1.95***
	(0.28)	(0.28)	(0.30)	(0.29)	(0.29)	(0.28)
Number of observations	392	367	367	367	367	367
Pseudo R2	0.16	0.18	0.19	0.19	0.19	0.20
Nagelkerke R2	0.22	0.24	0.26	0.25	0.26	0.27
Correctly classified (%)	85.46	87.74	88.01	88.01	88.01	88.28
Chi2	48.36***	55.56***	60.71***	58.75***	60.75***	58.04***
Log likelihood	-132.90	-116.50	-114.70	-115.80	-115.20	-114.10

Notes: standard errors in parentheses: + p<0.10, * p<0.05, ** p<0.01, *** p<0.001. Year dummies included.

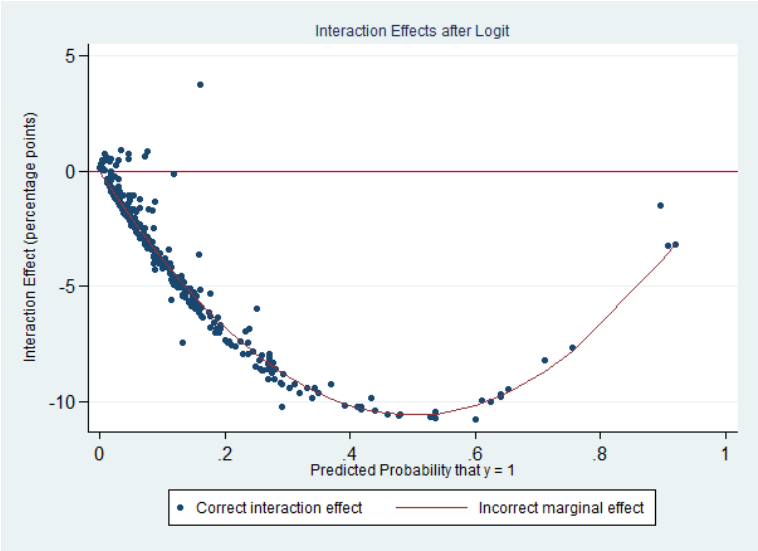

Figure 2a Differences between correct- and incorrect interaction effect of asset specificity and host-country indulgence

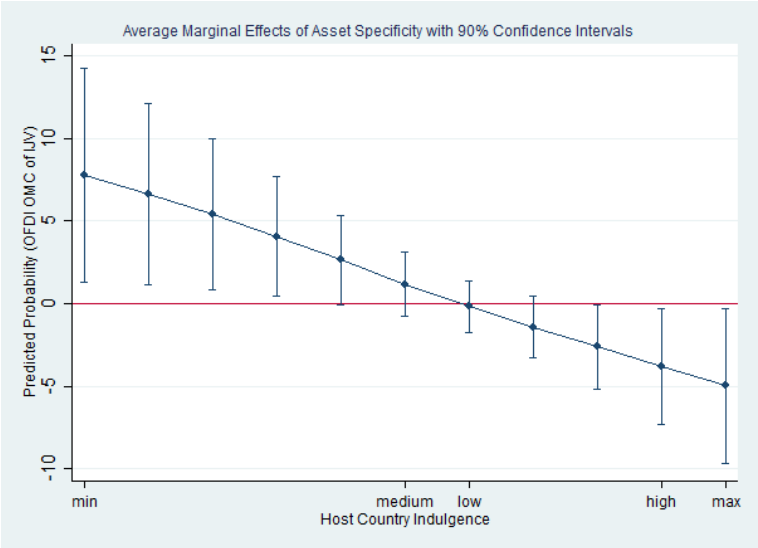

Figure 2b Predicted probabilities for asset specificity at different levels of host-country indulgence

Figure 2a illustrates that (1) the average marginal effects of *asset specificity* is negative and significant (the confidence intervals does not include zero) and (2) the positive effects are enhanced, at a relatively high level of *host-country indulgence*. This result thus supports Hypothesis 1, in which we suggest that the negative effect of *asset specificity* on a firm's propensity to choose an IJV mode of entry is enhanced in a high indulgence host-country culture.

Surprisingly, we also find that the average marginal effects of *asset specificity* (1) are positive and significant and (2) the positive effects are weakened, at a relatively low level of *host-country indulgence*, which contradicts with conventional transaction cost-based predictions. One possible explanation is that we use a firm's R&D intensity to measure the asset specificity of its OFDI projects. A firm's R&D intensity may also reflect the stock of knowledge that the firm is exploiting abroad (Brouthers & Hennart, 2007). An IJV's R&D activities can improve the IJV's performance when the appropriability hazards related to its R&D activities are mitigated (Teece, 1986; Zhang, Li, Hitt, & Cui, 2007). Our findings suggest that their understanding applies in a low indulgence host-country culture, where moral disciplines discourage opportunism (Hofstede et al., 2010; Matthews, 1990). In a high indulgence culture where moral disciplines are less used in social control, Chinese firms' attitude to transaction-specific assets is consistent with transaction cost-based predictions.

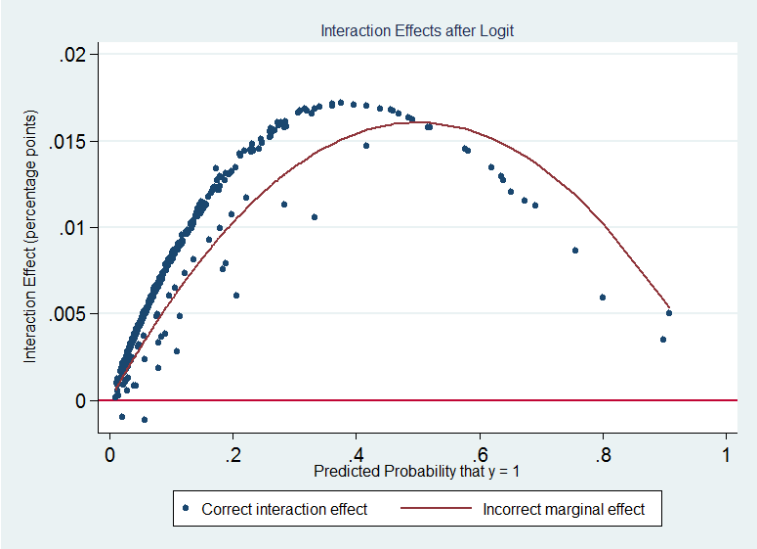

Figure 3a Differences between correct- and incorrect interaction effect of general international experience and host-country indulgence

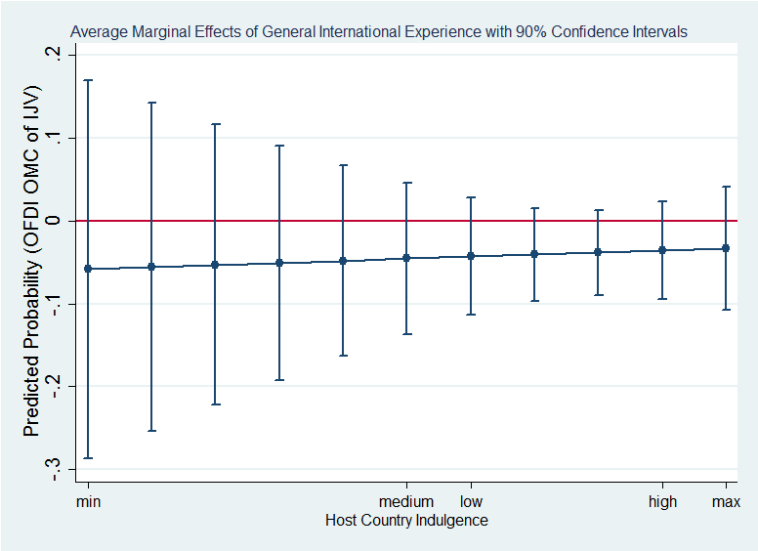

Figure 3b Predicted probabilities for general international experience at different levels of host-country indulgence

In Model 4 in Table 6, the coefficient of *general international experience* is negative but the coefficient of *general international experience* × *host-country indulgence* is positive and insignificant ($p>0.10$). The values of the correct interaction effect range from -0.00 to 0.02, with a mean value of 0.01, and that the *z*-statistic values range from -0.07 to 0.23, with no value of the correct interaction effect significant ($-1.645<z<1.645$). Figure 3b shows that the average marginal effects of *general international experience* are negative but insignificant (the confidence intervals include zero) at all levels of *host-country indulgence*. Therefore, we find no support for Hypothesis 2a, in which we suggest that the negative relationship between *general international experience* and a firm's propensity to choose an IJV mode of entry is strengthened in a high indulgence host-country culture.

The coefficient of *host-country experience* is negative and the coefficient of *host-country experience* × *host-country indulgence* is negative and significant ($p<0.05$) in Model 5 in Table 6. The values of the correct interaction effect range from -0.91 to 0.14, with a mean value of −0.23, and that the *z*-statistic values range from -2.10 to 0.92, with only some negative

values of the correct interaction effect being significant ($z<-1.96$). Figure 4b shows that the average marginal effects of *host-country experience* (1) are negative and significant (confidence intervals does not include zero) and (2) the negative effects are enhanced, at a high level of *host-country indulgence*. Therefore, this result supports Hypothesis 2b, in which we suggest that the negative effect of host-country experience on a firm's propensity to choose an IJV mode of entry is enhanced in a high indulgence host-country culture.

In Model 6 in Table 6, (1) the positive coefficient of *host-country political risk* and (2) the positive and significant interaction term *host-country political risk* × *host-country indulgence* suggests that *host-country indulgence* is a significant ($p<0.05$) and positive moderator of the relationship between *host-country political risk* and the likelihood of choosing an IJV mode of entry. The values of the correct interaction effect range from -0.00 to 0.34, with a mean value of 0.09, and that the *z*-statistic values range from -0.21 to 2.48, with only some positive values of the correct interaction effect being significant ($p<0.05$). Figure 5b illustrates that the average marginal effects of *host-country political risk* (1) are positive and significant ($p<0.10$) and (2) the positive effects are enhanced, at a high level of *host-country indulgence*. Thus, we find support for Hypothesis 3, in which we suggest that the positive relationship between host-country political risk and the FDI OMC of an IJV is strengthened in a high indulgence host-country culture. Interestingly, we also find that the average marginal effects of *host-country political risk* (1) are negative and significant and (2) the negative effects are weakened, at a low level of *host-country indulgence*, which contradicts with conventional transaction cost-based predictions.

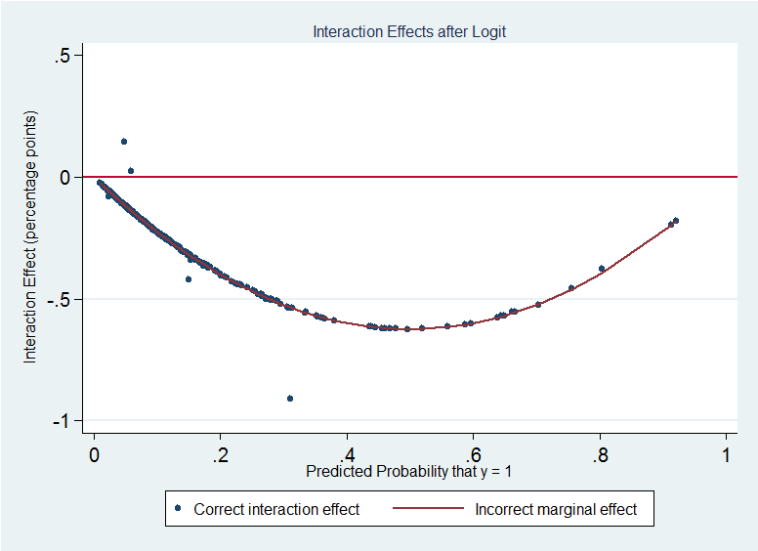

Figure 4a Differences between correct- and incorrect interaction effect of host-country experience and host-country indulgence

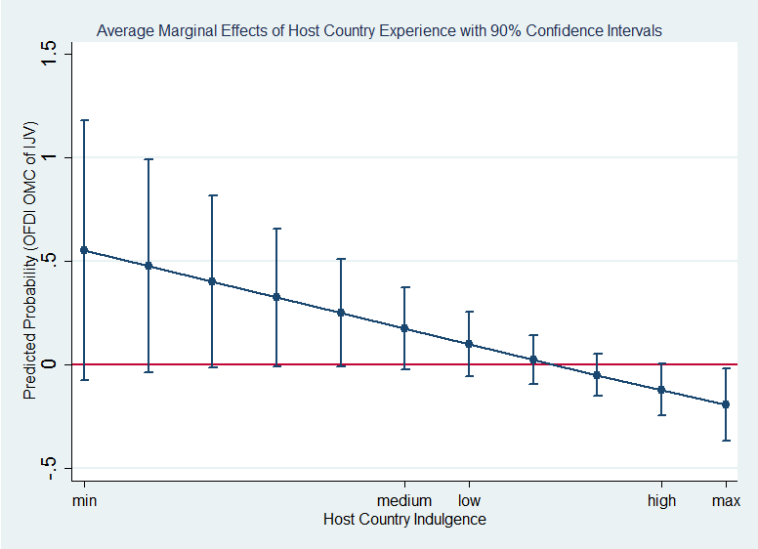

Figure 4b Predicted probabilities for host-country experience at different levels of host-country indulgence

Several existing studies suggest that this is probably due to the capital market imperfections and institutional factors in China, which may have induced a perverse attitude to risk among Chinese firms (Buckley et al., 2007a). Host-country political risk does not always impede investment from China (Cui & Jiang, 2009; Quer, Claver, & Rienda, 2012). Our findings suggest that their understanding applies only in a low indulgence host-country culture, where

maintaining order in the nation is given a high priority (Hofstede et al., 2010). In a high indulgence culture where maintaining order in the nation is not given a high priority, Chinese firms' attitude to risk is consistent with transaction cost-based predictions.

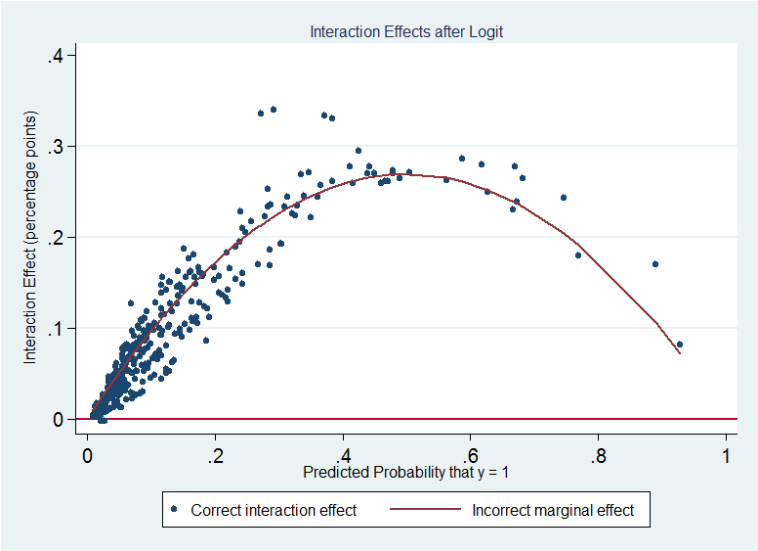

Figure 5a Interaction effects of host-country political risk and host-country indulgence

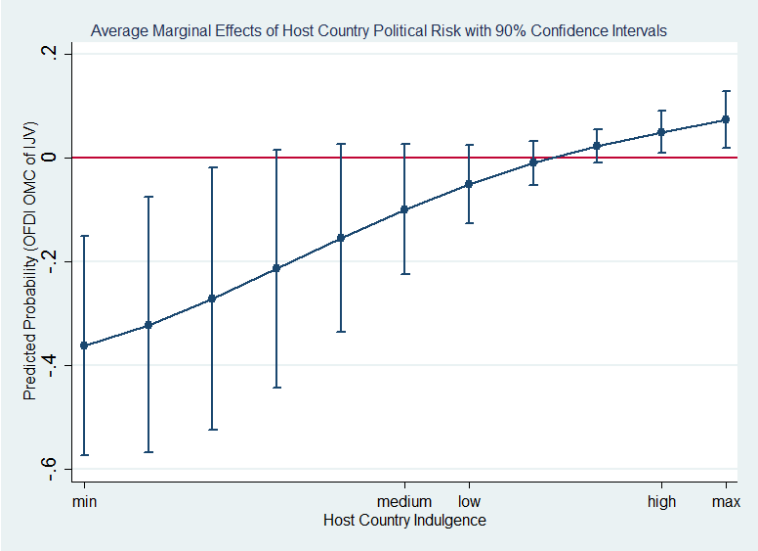

Figure 5b Predicted probabilities for host-country political risk at different levels of host-country indulgence

Robustness tests

First, we used alternative measures for our explanatory variables. we used a parent firm's marketing intensity instead of its R&D intensity to measure asset specificity of an FDI project in Model 1 in Table 7, because marketing intensity is another common measure of asset specificity in the existing literature (Zhao et al., 2004). Marketing intensity is calculated as a parent firm's advertising expenditures divided by its total sales in year t-1. We also used general international experience dummy instead of general international experience (continuous) in Model 2 in Table 7 and host-country experience dummy instead of host-country experience (continuous) in Model 7 in Table 7. Using a dichotomous rather than a continuous measure of experience is in line with prior international business studies such as Filatotchev, Liu, Buck and Wright (2009). The general international experience dummy is coded 1 if the firm has other overseas investment before this OFDI project, and 0 if otherwise. The coding of the host-country experience dummy is similar. At last, we used the Military in Politics index from the International Country Risk Guide published by the PRS Group (Howell, 2011), instead of the Political Stability and Lack of Violence index from the Worldwide Governance Indicators published by the World Bank (Kaufmann, Kraay, & Mastruzzi, 2011), to measure host-country political risk in Model 4 in Table 7. The International Country Risk Guide suggests that military participation in politics is often associated with political risk. We find those results similar to our main results, except that the coefficient of *host-country experience* (dummy) is positive while the coefficient of *host-country experience* (dummy) × *host-country indulgence* is negative and significant ($p<0.05$). Then, we have calculated and found that the values of the correct interaction effect

range from -1.28 to 0.00, with a mean value of −0.51, and that the *z*-statistic values range from -3.82 to 0.01, with only some negative values of the correct interaction effect being significant (z<-1.96). Figure 6b shows that the average marginal effects of *host-country experience* (dummy) (1) are negative and significant (confidence intervals does not include zero) and (2) the negative effects are enhanced, at a high level of *host-country indulgence*. At a relatively low level of *host-country indulgence*, this relationship becomes positive but the moderating effect also becomes insignificant, which is illustrated by the left part of the fitted line almost horizontal to the X axis. That is to say, the estimation result of our robustness tests is consistent with our main result.

Second, we use an alternative model for our main regression. Apart from Logit regression, Probit regression is commonly used in management research to estimate the model when the data is cross-sectional data and the dependent variable is dichotomous. The main difference between Logit and Probit regression is the distribution function. We rerun our tests using Probit regression in Models 5-8 in Table 7 and find results consistent with our main results.

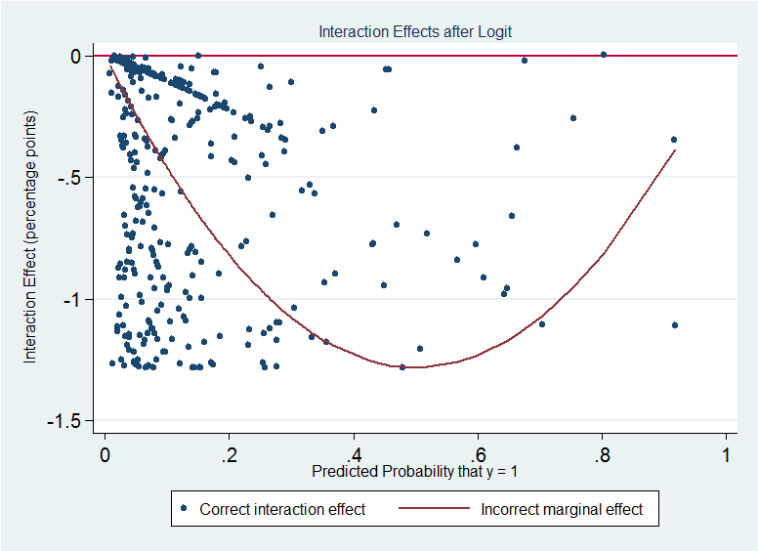

Figure 6a Differences between correct- and incorrect interaction effect of host-country experience (dummy) and host-country indulgence

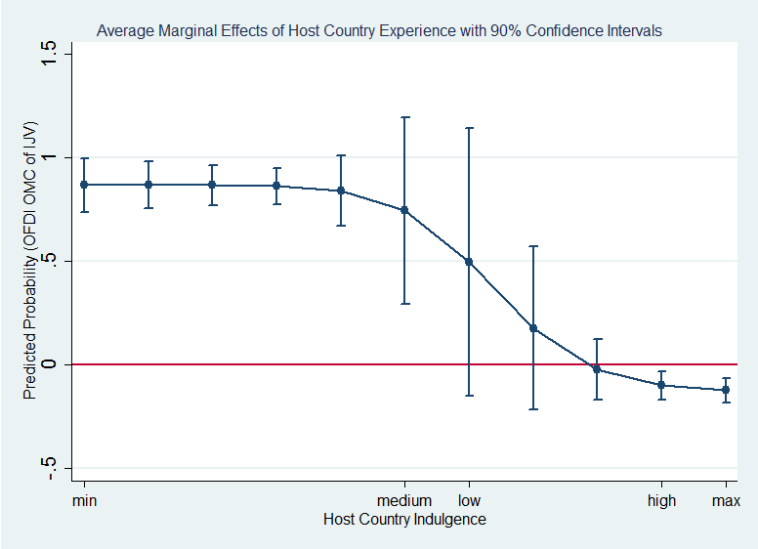

Figure 6b Predicted probabilities for host-country experience (dummy) at different levels of host-country indulgence

Table 7 Robustness tests of Chapter 2

Variables	Model	Model	Model	Model	Model	Model	Model	Model
Explanatory variables								
Asset specificity	-44.84	-14.53	-13.96	-15.74	-11.29	-8.70	-7.84	-7.98
	(60.00)	(11.53)	(11.15)	(11.90)	(6.88)	(5.61)	(5.34)	(5.41)
General international experience	-0.38	-0.75	-0.49	-0.43	-0.24	-0.24	-0.24	-0.22
	(0.35)	(0.74)	(0.38)	(0.38)	(0.17)	(0.17)	(0.17)	(0.16)
Host-country experience	0.36	-0.01	0.65	0.13	0.09	-0.04	-0.07	-0.06
	(0.74)	(0.85)	(1.25)	(0.90)	(0.39)	(0.45)	(0.36)	(0.44)
Host-country political risk	-0.01	-0.05	-0.01	0.30	-0.04	-0.03	-0.03	0.04
	(0.27)	(0.27)	(0.27)	(0.16)	(0.14)	(0.14)	(0.14)	(0.12)
Moderator variables								
Host-country indulgence	-0.14	-0.03	0.00	-0.13	-0.11	-0.04	-0.07	-0.19
	(0.42)	(0.38)	(0.36)	(0.31)	(0.19)	(0.19)	(0.19)	(0.19)
Interaction terms								
Asset specificity × Host-country indulgence	-181.7+				-21.82*			
	(107.0)				(10.04)			
International experience × Host-country		-0.57				-0.01		
		(0.85)				(0.25)		
Host-country experience × Host-country			-5.13*				-1.50*	
			(2.59)				(0.75)	
Host-country political risk × Host-country				0.61+				0.51+
				(0.34)				(0.28)
Control variables								
Firm age	0.77*	0.63+	0.72*	0.84*	0.36*	0.37*	0.38*	0.38*
	(0.34)	(0.34)	(0.33)	(0.37)	(0.17)	(0.17)	(0.17)	(0.17)
Firm size	-0.04	0.00	0.01	0.03	0.01	0.00	0.01	0.01
	(0.17)	(0.16)	(0.16)	(0.18)	(0.08)	(0.08)	(0.08)	(0.08)
Profitability	-0.27	-0.09	-0.14	-0.15	-0.13	-0.14	-0.15	-0.19
	(1.75)	(1.51)	(1.65)	(1.79)	(0.80)	(0.79)	(0.80)	(0.77)
Export orientation	-0.57	-0.72	-0.72	-0.77	-0.39	-0.39	-0.40	-0.45
	(0.56)	(0.54)	(0.54)	(0.62)	(0.27)	(0.27)	(0.27)	(0.29)
Establishment mode	1.84+	1.83*	1.92*	2.09**	1.09*	1.06*	1.12*	1.09*
	(0.95)	(0.82)	(0.84)	(0.78)	(0.47)	(0.47)	(0.46)	(0.45)
Home country regional institutional	-0.47**	-0.41*	-0.39*	-0.37*	-0.25**	-0.25**	-0.25**	-0.25**
	(0.17)	(0.17)	(0.16)	(0.18)	(0.09)	(0.09)	(0.09)	(0.09)
Home country regional institutional instability	-2.59	-2.15	-2.35	-2.54+	-1.10	-1.14	-1.16	-1.12
	(1.75)	(1.60)	(1.57)	(1.53)	(0.83)	(0.81)	(0.81)	(0.80)
Cultural distance	-0.24	-0.27	-0.25		-0.15	-0.16	-0.15	
	(0.23)	(0.24)	(0.24)		(0.13)	(0.12)	(0.12)	
Constant	-	-	-	-	-	-	-	-
	(0.28)	(0.31)	(0.30)	(0.29)	(0.16)	(0.15)	(0.15)	(0.15)
Number of observations	367	367	367	355	367	367	367	367
Pseudo R2	0.20	0.19	0.20	0.23	0.20	0.19	0.20	0.20
Nagelkerke R2	0.26	0.25	0.26	0.30	0.26	0.25	0.26	0.26
Correctly classified (%)	88.44	87.90	88.17	88.33	87.90	87.90	88.17	87.90
Chi2	51.36**	58.11**	59.47**	61.53**	65.53**	62.59**	65.99**	62.12**
Log likelihood	-114.40	-115.90	-114.60	-105.50	-114.20	-115.20	-114.60	-114.10

Notes: standard errors in parentheses: + p<0.10, * p<0.05, ** p<0.01, *** p<0.001. Year dummies included.

2.7 Discussions and conclusions

Our study is motivated by the desire to better understand how national culture influences the FDI OMC of an IJV. It contributes to the literature by comparing MNEs' FDI OMC of an IJV in an indulgent culture with that in a restraint culture. As noted earlier, prior research has primarily examined how

national cultural dimensions-such as power distance, individualism-collectivism, uncertainty avoidance and long-term orientation-affect international entry mode choice, by comparing international entry mode choice in different cultural contexts. While several studies have acknowledged that the national cultural dimension of IR is a relevant dimension in cross-culture management (Akdeniz & Talay, 2013; Aramo-Immonen, Jaakkola, & Linna, 2011), ours is the first to examine the role of this national cultural dimension in FDI OMC.

We drew upon transaction cost and institutional theories (Anderson & Gatignon, 1986; Chen, Peng, & Saparito, 2002; Roberts & Greenwood, 1997) to examine how the national cultural dimension of IR may determine (1) local firms' opportunistic propensity, (2) local employees' propensity to deviate from their contractual obligations, and (3) local governments' propensity to maintain order in the nation, and hence this national cultural dimension may moderate the relationship between transaction cost factors and the FDI OMC of an IJV. Using a cross-sectional outward FDI dataset of manufacturing firms from China during 2005 and 2007, we find that Chinese firms are less likely to enter through the IJV mode for highly asset-specific FDI projects in an indulgent culture than in a restraint culture. Compared with the restraint culture, the indulgent culture often shows greater tolerance for opportunistic behaviours and hence adopting the IJV mode for a highly asset-specific FDI project may subject an MNE to the local partner's exploitation. We also find that inexperienced Chinese firms are more likely to enter through the IJV mode in an indulgent culture than in a restraint culture, and that this effect is statistically insignificant in terms of general international experience but significant with respect to host-country experience. These results suggest that

internal uncertainty becomes a more severe management problem in an indulgent culture-where local employees have a greater latitude to have fun and spend money (Costa et al., 2013)-than in a restraint culture. In the highly indulgent culture, joint venturing with local firms is more in need for firms new to the host market, which lack sufficient knowledge and ability to manage their local employees. These findings also suggest that there may be a limit for general international experience to help an MNE overcome uncertainty internal to its future FDI projects, because experience from one host country may not apply in the next host country (Dow & Larimo, 2009). We also find that Chinese firms are more likely to enter high political risk countries through the IJV mode, where the host-country culture is more indulgent. Political risk is more likely to run out of control in an indulgent culture, because maintaining order in the nation is not given a high priority in an indulgent culture (Hofstede et al., 2010). These findings are consistent with our arguments that the culture dimension of IR has a significant impact on an MNE's FDI OMC from transaction cost and/or institutional perspectives.

Our focus on the role of the cultural dimension of IR in FDI OMC differs from yet complements some existing understanding in this field. Morschett et al. (2010) focus on the culture dimension of power distance and find that MNEs from high power distance countries tend to choose the WFOE mode for their foreign subsidiaries. Jung and Suh (2013) concentrate on the culture dimension of individualism-collectivism and find that MNEs from high collectivism countries are likely to enter a foreign market through the WFOE mode. Erramilli (1996) is interested in the culture dimension of uncertainty avoidance and finds that MNE managers from a high uncertainty avoidance culture prefer a highly integrated ownership mode such as WFOE to organize

the foreign subsidiary. Peng and Beamish (2014) discuss the culture dimension of long-term orientation and find that MNEs tend to maintain high ownership levels in long-term oriented host countries. These studies advanced the international entry mode literature by examining the impact of different dimensions of national culture. Our findings suggest that, by introducing the national culture dimension of IR, new insight has been provided on the determinants of FDI OMC and may stimulate future research in this direction. Our findings on the contingent effect of the IR culture dimension also partly differ from and complement prior research in this area. Aware of the lack of contextualisation in the conventional transaction cost approach (Granovetter, 1985), most studies have examined how national culture distance influences the transaction cost-based predictions of FDI OMC via its impact on asset specificity (Agarwal, 1994; Erramilli & Rao, 1993; Morschett, Schramm-Klein, & Swoboda, 2008), internal uncertainty (Cho & Padmanabhan, 2005), and external uncertainty (Brouthers & Brouthers, 2001). A few of them, such as Peng & Beamish (2014), have examined how a single cultural dimension, in terms of long-term orientation, changes an MNEs' propensity to adopt transaction cost-based, regarding cross-national distance, predictions of FDI OMC. Our findings suggest that the likelihood of an MNE to use the transaction cost-predicted FDI OMC, regarding asset specificity, internal uncertainty and external uncertainty, is conditioned on the host-country cultural dimension of IR. Our research, together with other research in this field, illustrates that the development and testing of the moderating influences of cultural factors on transaction-cost attributes is in need to expand our understanding of the determinants of FDI OMC.

Our study has limitations that may have implications for future research. First, we take into account an MNE's foreign entry strategy between the WFOE and IJV modes only. Since transaction costs may also influence an MNE's foreign entry mode choice between (1) an equity-based mode and a non-equity-based mode and (2) a greenfield mode and an acquisition mode (Pan & David, 2000), future research may examine our research question in those contexts. Second, our use of archival data is incapable of capturing the perceptions of MNE managers of the pivotal variables such as asset specificity and uncertainty (Brouthers & Hennart, 2007), and hence future research can use survey instruments to complement our documentary data. Third, this study is limited to explaining how the host-country cultural dimension of IR affects FDI OMC. Future research may explore how the home-country cultural dimension of IR influences FDI OMC. Fourth, we find that, rather than the interaction between general international experience and host-country cultural dimension of IR, but the interaction between country-specific experience and host-country cultural dimension of IR, is an important determinant of FDI OMC. Future research could further observe how different cultural dimensions interact with a firm's FDI experience of different attributes to influence its FDI OMC. Finally, this study has its limitations with respect to sampling. MNEs in our sample are relatively large firms. Due to data availability in ARIES, we include only MNEs with annual sales of at least five million RMB in our sample. Since small and medium-sized firms may be subject to liability of smallness such as highly sensitive to uncertainty (Maekelburger, Schwens, & Kabst, 2012), their responses to cultural influences and thus their FDI OMC, may differ from those of larger firms. Future research may examine whether our findings are consistent with

smaller MNEs. We also focus on FDI firms from China only. Although we believe that our theoretical arguments apply to a wider scope of transition or emerging countries, a single home-country sample may not fully reveal that potential. Compared to other transition or emerging economies, such as India which is focused on FDI in manufacturing and IT services, China has some unique attributes, including huge FDI in resource extraction activities dominated by state-owned enterprises (Gammeltoft). Future research may examine whether our findings are consistent with other emerging economies. We also consider only FDI firms from the manufacturing industry. Some existing studies suggest that transaction cost-based predictions of FDI OMC differ between manufacturing firms and service firms (Brouthers & Brouthers, 2003). Therefore, future research may also test whether our arguments are supported by the FDI OMC of service firms. Such research efforts may not only advance our knowledge about FDI OMC but also offer practical implications with respect to how firms from emerging economies can internationalize more efficiently.

This study also provides valuable managerial and policy implications. For MNE managers, we would advise them to pay more attention to transaction costs induced by asset specificity, country-specific experience or host-country political risk in their FDI ownership decision making, because FDI OMC with lower transaction costs often result in better performance of an FDI project (Brouthers, 2002; Brouthers et al., 2003). Our findings confirm that MNEs are more likely to stick to a low transaction-cost FDI OMC in an indulgent host-country culture than in a restraint host-country culture. Transaction costs associated with FDI OMC become a bigger concern of MNEs in an indulgent host-country culture than in a restraint host-country

culture, because opportunism and disorder in the nation are more likely to happen in an indulgent culture. Employees from an indulgent culture also have a greater latitude for spending money and having fun (Hofstede, 2011), and they may bring this social norm to work and reduce their work efficiency. For policymakers from an indulgent culture, we advise them to enhance local rules and law against business opportunism, so that transaction-specific FDI projects can be properly protected from local firms' exploitation. Maintaining order in the nation should be given a high priority in policy making, thus providing MNEs with a relatively stable business environment in an indulgent culture. In contrast, those are far less of a concern for host-country policymakers from a restraint culture, because such societies' dependence on moral disciplines can mitigate opportunism, and maintaining order in the nation is an established social norm (Hofstede et al., 2010).

In conclusion, to the limit of our knowledge, this is the first empirical study that explicitly examines how the national cultural dimension of IR affects an MNE's FDI OMC. Our findings broaden our knowledge of culture as a set of institutional constraints on firm behaviours across IJV life-cycle stages and should encourage further study of this interesting and promising topic.

Chapter 3. Impact of state ownership of the host-country IJV partner on Intra-industry Productivity Spillovers from International Joint Ventures

3.1 Abstract

This chapter intends to explore new mechanisms through which host-country institutions constrain firm behaviours at the stage of international joint venture (IJV) operation. Specifically, in a transition economy context, we examine whether host-country institutions constrain intra-industry productivity spillovers from IJVs to domestic firms through state ownership of the host-country IJV partner. Taking an institutional perspective, we propose that, compared with IJVs with privately-owned host-country partners (PIJVs), IJVs with state-owned host-country partners (SIJVs) (1) are more technologically advanced and (2) have a stronger incentive, to facilitate the improvement of domestic firms' productivity, especially the improvement of SOEs' productivity. Using comprehensive panel data from 256396 domestic firms and 68381 foreign-invested firms in Chinese manufacturing industry between 1998 and 2007, our empirical results strongly support our theoretical arguments. We find that SIJVs generate a greater magnitude of intra-industry productivity spillovers to domestic firms than PIJVs. We also find that (1) SIJVs generate a greater magnitude of intra-industry productivity spillovers to SOEs than to POEs and that (2) PIJVs generates very limited intra-industry productivity spillovers to both SOEs and POEs.

3.2 Introduction

Inward foreign direct investment (FDI) is widely considered to have a salient impact on China's economic success (Yao & Wei, 2007). Apart from creating

the export surplus and domestic employment, in China FDI also generates productivity spillovers to domestic firms (Liu, Parker, Vaidya, & Wei, 2001). Because governments in transition or developing economies such as China, Romania and Vietnam play a salient role in shaping firm behaviours, researchers have studied the impact of state ownership on FDI productivity spillovers, focusing on whether state ownership of domestic firms may influence their absorptive capacity (Li, Liu, & Parker, 2001; Liu, Wang, & Wei, 2009).

According to the institutional view, state ownership and private ownership affect domestic firms' responses to FDI productivity spillovers via different mechanisms. State-owned enterprises (SOEs) have access to the government supportive policy and scarce resources, and they are subject to government policy burdens and soft budget constraints (Lin, Cai, & Li, 1998). Government supportive policy grants SOEs prioritized access to technology advancement (Child, 1996), and SOEs' absorptive capacity to capture FDI productivity spillovers is hence enhanced. However, soft budget constraints result in SOEs' lack of incentives to improve their productivity by learning from foreign-invested firms (Buckley et al., 2002). In contrast, privately-owned enterprises (POEs) have to survive with market competition and hard budget constraints (Nee, 1992). Both market competition and hard budget constraints may drive POEs to seek productivity improvement by learning foreign knowledge (Xiao & Park, 2017). According to this view, compared with POEs, SOEs are more technologically advanced but have a weaker incentive to capture FDI spillovers.

When studying the impact of state ownership on FDI spillovers, existing research focuses only on state ownership of domestic firms as spillover receivers, but not that of the host-country IJV partner as spillover sources. Apart from the literature which explores the relationship between state ownership and FDI spillovers, the literature pertaining to productivity spillovers from IJVs also ignores this research question. From the perspective of IJVs, our understanding of the determinants of productivity spillovers from IJVs is limited to the level of foreign ownership (Blomström & Sjöholm, 1999; Fatima, 2016; Konwar, McDonald, Wang, & Wei, 2015; Takii, 2005), country of origin of the foreign partner (Ito, Yashiro, Xu, Chen, & Wakasugi, 2012), firm age, size and location (Gorodnichenko, Svejnar, & Terrell, 2014), and industry types (manufacturing or service) (Tang, 2008). In reality, however, state ownership exists not only in domestic firms but also in international joint ventures (IJVs). State-owned host-country partners are often preferred by foreign investors, when foreign investors are faced with difficulties in accessing government-controlled- resources or markets on their own (Gueorguiev & Malesky, 2012). Otherwise, foreign investors are more likely to cooperate with privately-owned host-country partners, because state-owned host-country partners may also induce government interventions and operational inefficiency (Luo, 1997).

To fill this research gap between state ownership of the host-country IJV partner and productivity spillovers from IJVs to domestic firms, we theorize in this paper that state ownership of the host-country IJV partner pertains to two principal spillover drivers: technology gap and absorptive capacity (Meyer, 2004). State-owned host-country partners' advantages in technology could make them capable of cooperating with technologically-advanced

foreign investors, while privately-owned host-country partners' disadvantages in technology may limit them to technologically-backward foreign investors. Thus, we propose that there may be greater potential for domestic firms to learn from IJVs with state-owned host-country partners (SIJVs) than from IJVs with privately-owned host-country partners (PIJVs). Ownership-induced government interventions could also drive SIJVs to help improve domestic firms' productivity, especially SOEs' productivity, while PIJVs are not directly subject to such interventions. PIJVs are also unlikely to help improve domestic firms' productivity because they are rivals in the host market. In addition, SOEs' advantages in technology will also contribute to their absorptive capacity. Therefore, we propose that domestic firms' absorptive capacity to capture productivity spillovers from SIJVs should be stronger than their absorptive capacity to capture productivity spillovers from PIJVs, and that SOEs' absorptive capacity to capture productivity spillovers from SIJVs should be stronger than POEs' absorptive capacity to capture productivity spillovers from SIJVs. In addition, because of difficulties in learning from PIJVs through certain channels, we propose that SOEs' absorptive capacity to capture productivity spillovers from PIJVs should be no weaker than POEs' absorptive capacity to capture productivity spillovers from PIJVs. Empirically, we compare (1) the magnitude of intra-industry productivity spillovers from SIJVs to domestic firms and that of intra-industry productivity spillovers from PIJVs to domestic firms and (2) the magnitude of intra-industry productivity spillovers from SIJVs (PIJVs) to SOEs and that of intra-industry productivity spillovers from SIJVs (PIJVs) to POEs. The magnitude of intra-industry productivity spillovers from IJVs refers to the

extent to which domestic firms experience changes in productivity from the presence of IJVs within an industry (Javorcik & Spatareanu, 2008).

We contribute to the FDI spillover literature in two important ways. First, we contribute to the literature on spillovers from IJVs (Javorcik & Spatareanu, 2008; Smarzynska Javorcik, 2004). Our theoretical extension explains why and how state ownership of the host-country IJV partner may affect intra-industry productivity spillovers from IJVs to domestic firms. Second, we contribute the literature on state ownership-related FDI spillovers (Buckley, Wang, & Clegg, 2007b; Lu, Tao, & Zhu, 2017). We expand existing FDI spillover study, from concerning only the impact of state ownership on the spillover receiver, to taking into account the influence of state ownership on the spillover source.

This study may also provide useful managerial and policy implications. For IJV managers, this work may indicate that the magnitude of intra-industry productivity spillovers from SIJVs to domestic firms is different from that of intra-industry productivity spillovers from PIJVs to domestic firms. Their partner selections between state-owned host-country firms and privately-owned ones can affect the extent to which their local competitors may benefit from their productivity spillovers. For host-country policymakers, this work may suggest whether SIJVs or PIJVs may generate a greater magnitude of intra-industry productivity spillovers to domestic firms. Hence, the host government should encourage foreign investors to establish the type of joint venture that can generate a greater magnitude of intra-industry productivity spillovers to domestic firms.

The rest of this essay is organized as follows. In the next section, we summarise the existing literature on FDI productivity spillovers and address the research gaps that we intend to fill in this study. This is followed by the development of hypotheses. Then we report our research methods and empirical results. Finally, we discuss the main contributions, future research directions and implications of our study for both research and practice.

3.3 Literature review

Intra-industry FDI productivity spillovers are part of foreign-invested firms' impacts on the host country, reflected by changes in domestic firms' productivity (Blomström & Kokko, 1998). In international business study, the productivity spillover effect is a frequently discussed topic from the economic perspective and an emerging topic from the management perspective (Eden, 2009). Productivity spillovers may occur in four directions: from foreign-invested firms to domestic firms (Liu *et al.*, 2001), from domestic firms to foreign-invested firms (Driffield & Love, 2003), from foreign-invested firms to foreign-invested firms (Mudambi & Santangelo, 2016), and from domestic firms to domestic firms (Gilbert, McDougall, & Audretsch, 2008). FDI productivity spillovers occur in the first direction. It is generally accepted that FDI productivity spillovers are generated by non-market transactions between foreign-invested firms and domestic firms (Meyer, 2004), especially informal (not formally contracted) flows of knowledge from foreign-invested firms to domestic firms (Eapen, 2012). Kinoshita (1998) considers demonstration-imitation, competition and labour training as the main channels via which domestic firms may attain intra-industry productivity gains from inward FDI. While not a concern of this study, domestic firms may also attain inter-industry productivity gains from inward FDI via

transactional linkages (Javorcik & Spatareanu, 2011; Liu, 2008). Existing research is mainly focused on analysing three main attributes of FDI productivity spillovers: magnitude, scope and speed. Research on the magnitude of FDI productivity spillovers explores whether and to what extent domestic firms benefit from FDI presence (Aitken & Harrison, 1999). Research on the scope of FDI productivity spillovers is concerned with whether the spillover effect is limited by sectoral, geographical and/or technological scope of FDI (Driffield, Munday, & Roberts, 2004). Research on the speed of FDI productivity spillovers investigates the acceleration of domestic firms' innovation and the erosion of foreign-invested firms' technological advantages associated with the spillover effect (Perri & Peruffo, 2016). Existing research either focuses on one attribute of FDI productivity spillovers or includes several attributes of FDI productivity spillovers in one study (Barrell & Pain, 1997). This study is focused on one attribute of FDI productivity spillovers, namely the magnitude.

Intra-industry FDI productivity spillovers in transition or emerging economies comprise a process in which domestic firms learn from foreign-invested firms (Meyer & Sinani, 2009; Zhang, Li, & Li, 2014). The precondition for such learning is the technology gap between foreign-invested firms and domestic firms (Borensztein, De Gregorio, & Lee, 1998). Technology gap refers to the degree to which foreign-invested firms are technologically advanced relative to domestic firms (Gerschenkron, 1962). The larger the technology gap between foreign-invested firms and domestic firms, the greater the potential for domestic firms to learn from foreign-invested firms (Caves, 1974). However, FDI productivity spillovers are difficult to materialize without domestic firms' sufficient absorptive capacity

(Zhang, Li, Li, & Zhou, 2010). Absorptive capacity refers to a firm's "ability to recognize the value of new information, assimilate it, and apply it to commercial ends" (Cohen & Levinthal, 1990). Absorptive capacity determines the extent to which domestic firms can take advantage of the technology gap to improve their own productivity. A firm's absorptive capacity is determined by and positively associated with its technology advancement (Murovec & Prodan, 2009), its incentives to learn from the source (Buckley et al., 2002) and the effectiveness of information exchange between the firm and the source (Borgatti & Cross, 2003). Although not a concern of this study, existing literature also tries to explain FDI productivity spillovers from the competition perspective (Chen, 1996) and the network perspective (Burt, 1992). Competition-based research suggests that market commonality and resource similarity are likely to intensify the industry rivalry between foreign-invested firms and domestic firms and subsequently impede FDI spillovers (Chang & Xu, 2008). Network-based literature suggests that network tie is crucial to FDI spillovers because it serves as platforms for interactions between foreign-invested firms and domestic firms (Eapen, 2012). Important theories/paradigms adopted in FDI spillover research are listed on the next page in Table 8.

Table 8 Important theories adopted in FDI spillover research

Author (s)	Focus	Theory/paradigm	Main arguments
(Abramovitz, 1986; Gerschenkron, 1962)	Antecedents	Technology gap	The existence of technology gaps between two countries offers the potential for the backward one to catch up with the advanced one.
(Burt, 1992; Granovetter, 1977)	Antecedents	Network tie	A relationship, whether it is strong or weak, generates information benefits when it is a bridge over a structural hole.
(Chen, 1996)	Antecedents	Competition	Market commonality and resource similarity affect the drivers of competitive behaviour, awareness, motivation, and capability, which affect the chance of competitive attack and response between two rivals.
(Cohen & Levinthal, 1990)	Antecedents	Absorptive capacity	A certain level of absorptive capacity is necessary for a firm to benefit from technologies developed by other firms.
(North, 1990; Scott, 1995a)	Antecedents	Institutions	Institutions (1) establish incentives and business practices that influence an organisation's strategy making and (2) shape an organisation's abilities to implement strategies.

The institutional view stresses the interaction between institutions and organisations and that a firm's behaviour is shaped by institutions, through formal constraints like law and rules and informal mechanisms such as social norms and cultural orthodoxy (Scott, 1995a). Institutional constraints compromise incentives and sanctions (North, 1990). Those incentives and sanctions impose strong pressure on firms; those that conform to the institutional constraints are more likely to survive and succeed (Dacin et al., 2007). Specifically, in intra-industry FDI spillover studies, institutional factors are often considered influencing the spillover effect through three major mechanisms. First, domestic firms' learning ability is constrained by institutions. The local education system may affect the quality of labours in local firms and therefore those firms' ability to learn (Blomström & Kokko, 2002; Farole & Winkler, 2012). Second, institutions establish incentives and business practices that influence the knowledge acquisition processes. FDI regulations may affect the ease of FDI in a host country and tariff policy may influence its attractiveness to FDI (Chang, Chung, & Xu, 2007), thus the potential of FDI spillovers. Local labour market institutions may influence the mobility of employees between local and foreign-invested firms and thus the diffusion of knowledge (Hale & Long, 2006). Local governments grant

special economic zones more autonomy over their economic policies and institutional development than the rest of the country, where the collaboration between local- and foreign-invested firms are more likely to benefit local firms (Abraham, Konings, & Slootmaekers, 2010). Government support may also help domestic firms to benefit from the presence of FDI (Gorodnichenko et al., 2014). Third, although not a concern of this study, institutional frameworks offer motivations and organisational practices that affect the nature of competition. The institutional development of the host country may enhance local firms' competitive positions in the home markets and thus those firms' motivations and capabilities in upgrading their competences against foreign-invested firms (Meyer *et al.*, 2009). An important aspect is trade openness, which may create a more competitive market environment and a higher level of technology exchange (Yi, Chen, Wang, & Kafouros, 2015). Important empirical findings of institution-related FDI spillover research are listed below in Table 9.

Table 9 Important empirical findings of institution-related FDI spillover research

Author (s) /year	Focus	Theoretical framework	Level of analysis	Home country	Host country	Main findings
State ownership and intra-industry FDI productivity spillovers						
(Buckley et al., 2002)	State ownership of domestic firms	Absorptive capacity	firm	Multiple	China	State ownership of the domestic firms impacts intra-industry FDI productivity spillovers. SOEs are less likely to improve productivity through intra-industry FDI spillovers than COEs.
(Buckley et al., 2007b)	State ownership of domestic firms	Institutions and absorptive capacity	Firm	Multiple	China	Industrial characteristics and country of origin affects the impact of state ownership of the domestic firms on intra-industry FDI productivity spillovers.
(Du, Harrison, & Jefferson, 2011)	State ownership of domestic firms	Institutions	Firm	Multiple	China	SOEs are less likely to improve productivity through intra-industry FDI spillovers than non-SOEs.
(Li et al., 2001)	State ownership of domestic firms	Technology gap and absorptive capacity	Industry	Multiple	China	Spillover mechanisms affect the impact of state ownership of domestic firms on intra-industry FDI productivity spillovers.

(Liu et al., 2009)	State ownership of domestic firms	Absorptive capacity	Firm	Multiple	China	Neither SOEs nor non-SOEs benefit from intra-industry FDI productivity spillovers.
(Xiao & Park, 2017)	State ownership of domestic firms	Institutions	Firm	Multiple	China	SOEs are less likely to improve productivity through intra-industry FDI spillovers than non-SOEs.
Other institutions and intra-industry productivity FDI spillovers						
(Abraham et al., 2010)	Host-country special economic zone	Institutions	Firm	Multiple	China	The special economic zone impacts intra-industry FDI productivity spillovers. Firms in special economic zones are less likely to improve productivity through intra-industry FDI spillovers than others.
(Chang et al., 2007)	Host-country FDI regulation	Institutions	Firm	Multiple	China	A host country's FDI restriction on foreign ownership impedes intra-industry productivity spillovers from wholly foreign-owned enterprises.
(Du et al., 2011)	Host-country tariff policy	Institutions	Firm	Multiple	China	Higher tariffs are associated with lower intra-industry FDI productivity spillovers.
(Farole & Winkler, 2012)	Host-country institutional development	Institutions	Firm	Multiple	Low- and middle-income countries	A host country's spending on education, trade openness, and sector concentration positively affect intra-industry FDI spillovers to domestic low productivity firms. A host country's financial market openness, spending on education and investment openness positively affects intra-industry productivity spillovers from IJVs.
(Gorodnichenko et al., 2014)	Host-country government support	Institutions	Firm	Multiple	Central and Eastern Europe, Turkey and the Commonwealth of independent States.	A domestic firm manager's interaction with government officials enhances intra-industry FDI productivity spillovers.
(Hale & Long, 2006)	Host-country Labour market	Institutions	Firm	Multiple	China	The development of labour market institutions positively affects intra-industry FDI productivity spillovers.
(Xiao & Park, 2017)	Host-country institutional development	Institutions	Firm	Multiple	China	A host country's regional institutional development negatively affects intra-industry FDI productivity spillovers
(Yi *et al.*, 2015)	Host-country institutional development	Institutions	Firm	Multiple	China	A host country's regional intellectual property right protection, market development, and international openness positively affect intra-industry FDI productivity spillovers.
Institutions and other FDI spillovers						
(Alfaro, Kalemli‐Ozcan, & Sayek, 2009)	Host-country financial market	Institutions	Country	Multiple	Multiple	A host country's financial market development positively affects FDI productivity spillovers.
(Alguacil, Cuadros, & Orts, 2011)	Host-country institutional quality	Institutions	Country	Multiple	Multiple	The relationship between a host country's institutional quality and the FDI effect on growth is insignificant.
(Barry, 2007)	Host-country education system	-	Country	Multiple	Ireland	Ireland's vocational/technical oriented education system is the key to the success of the country's technology upgrade through inward FDI.

(Hanousek, Kočenda, & Maurel, 2011)	Host-country institutional environment	Institutions	Multiple	Multiple	Multiple	The relationship between bribery and FDI productivity spillovers is insignificant.
(Ketteni & Kottaridi, 2019)	Host-country labour- and financial market	Institutions	Country	Multiple	Multiple	A host country's labour flexibility positively affects the FDI effect on growth. A highly complex local financial environment hinders the FDI effect on growth.
(Meyer & Sinani, 2009)	Host-country institutional development	Institutions	Multiple	Multiple	Multiple	A host country's trade openness positively affects FDI productivity spillovers. A host country's transparency and economic freedom affects FDI productivity spillovers in a curvilinear (U-shaped) way.
(Wang, Gu, David, & Yim, 2013)	Host-country institutional development	Institutions	Region	Multiple	China	A host city's institutional development enhances the positive impacts of FDI on local labour productivity.

Existing literature, implicitly or explicitly based on the institutional view, suggests that state ownership of domestic firms is a key determinant of domestic firms' technology or incentives pertaining to FDI spillover effects (Li et al., 2001; Xiao & Park, 2017). State ownership of domestic firms may affect their technological capabilities of learning from foreign-invested firms (Buckley et al., 2007b). SOEs have access to the government supportive policy and prioritized access to production and innovation facilities (Child, 1996; Ma, Yao, & Xi, 2006). Therefore, China's SOEs are better positioned for technology advancement and thus more technologically advanced than POEs (Liu et al., 2009). Apart from domestic firms' technological capabilities, state ownership of domestic firms may also influence their incentives to learn from foreign-invested firms. SOEs are subject to soft budget constraints, which provide SOEs with constant financial support from the government regardless of performance (Lin et al., 1998). POEs are constrained by hard budget constraints, which drive underperformed POEs out of the market (Frydman, Gray, Hessel, & Rapaczynski, 2000). As a result, performance becomes less important for SOEs and so do their incentives to learn, compared with POEs.

Prior studies also indicate that the state ownership of domestic firms may affect their interaction with other organisations in the relevant organisation field (Liao, 2015). First, state ownership of domestic firms will affect foreign investors' partnering strategies. In China, foreign investors are conventionally divided into two groups: Hong Kong, Macau or Taiwan (HMT) firms and non-HMT firms (Wang, Wei, Liu, Wang, & Lin, 2014b). Non-HMT firms' ownership advantages often lie in state-of-the-art technology (Shi, 1998), and HMT firms' ownership advantages often result from standardised and mature technology (Wang, Clegg, & Kafouros, 2009). Hence, non-HMT firms are generally considered to be more technologically advanced than HMT firms. In cooperative operations, non-HMT firms prefer state-owned host-country partners while HMT firms prefer non-state-owned host-country partners (Huang Jr, 2004), possibly due to state-owned host-country partners' stronger technological capabilities. Second, state ownership of domestic firms may influence their obligations to other domestic firms. SOEs operate as agencies of the government that implement government policies and regulations (Shleifer, 1998). In transition or developing economies, government policies on FDI are focused on the use of inward FDI in enhancing domestic firms' competitiveness (Lall, 2000), and hence this focus becomes one of SOEs' policy burdens. For example, in building South Korean's industrialisation process, state-owned chemical and machinery firms trained domestic engineers via their turnkey plants or foreign engineers, and some of those engineers joined other domestic firms to provide the key knowledge base there (Kim, 2001). Third, state ownership of domestic firms may impact the domestic government's support for them. SOEs often underperform and ascribe their losses to the domestic government (Lin & Tan,

1999). To ease its pressure on financing SOEs, the domestic government is eager to improve SOEs' performance and hence implement SOE-favourable policies (Ma et al., 2006; Park, Li, & David, 2006). For the second and the third arguments, unlike SOEs that work as agencies of the government, POEs may neither bear similar policy burdens nor receive supportive policies alike.

These beliefs, which may or may not be supported by empirical evidence, shape reactions by IJVs and domestic firms, and hence the productivity spillovers from IJVs to domestic firms. We therefore argue that these beliefs, and hence foreign investors' partnering strategies in China, apply to their establishments of IJVs. SIJVs should be more technologically advanced than PIJVs, and therefore domestic firms learn more from SIJVs than from PIJVs. When joint-venturing with foreign firms, domestic firms may also bring in both their obligations to other domestic firms and the domestic government's support. Policy burdens and supportive policy on SIJVs are probably more salient and hence their roles in productivity spillovers from IJVs to domestic firms. Existing literature connects state ownership with FDI productivity spillovers and contributes to our understandings of how state ownership influences the spillover receiver, but not of how state ownership affects the spillover source, which is the research gap that we fill in this study. The research model is summarised in Figure 7.

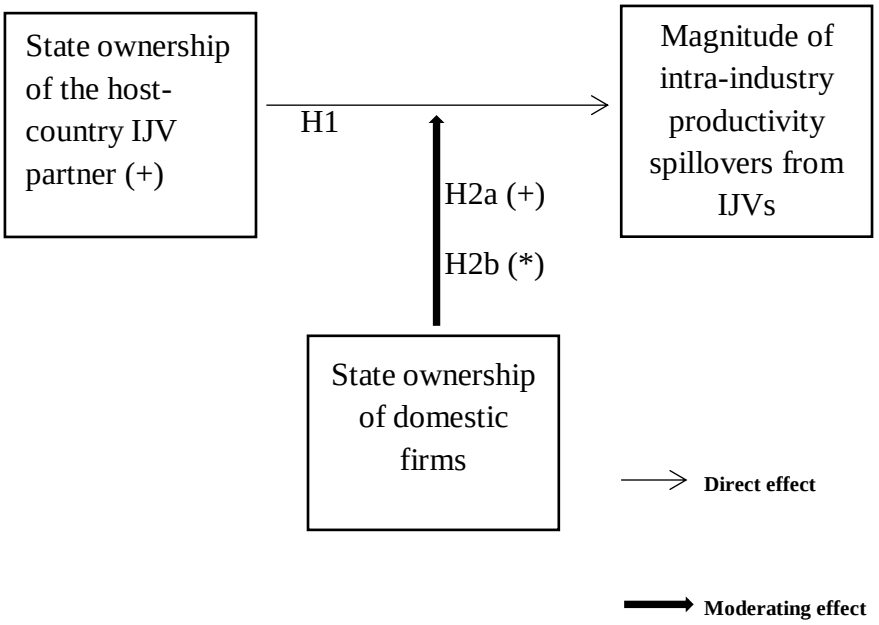

Figure 7 Research model of Chapter 3

3.4 Hypothesis development

Since the 1970s, investment in a domestic firm's technology advancement has been strongly supported by the Chinese government (Song, Nason, & Di Benedetto, 2008), and most domestic firms remain state-owned when this supportive policy is initially implemented (Schermerhorn Jr & Nyaw, 1990). Therefore, Chinese SOEs generally started advancing their technology earlier than their local private counterparts. Although POEs also receive government support, government policy favours SOEs (Liao, 2015). SOEs also have prioritized access to production and innovation facilities compared with POEs (Child, 1996). Therefore, SOEs are better positioned for technology development and thus more technologically advanced than POEs. The impact of these institutional arrangements enables SOEs to capture a greater magnitude of FDI productivity spillovers than POEs and COEs in technology-intensive industries (Buckley et al., 2007b), where the absorption of foreign technology requires relatively strong technological capabilities. When forming IJVs, non-HMT firms tend to cooperate with SOEs, while HMT

firms tend to cooperate with POEs or COEs (Huang Jr, 2004). Non-HMT firms' ownership advantages often lie in using state-of-the-art technology (Shi, 1998), while HMT firms' ownership advantages are often reflected by their ability to use the standardised and mature technology (Wang et al., 2009). That is to say, non-HMT firms are more technologically advanced than HMT firms (Wei & Liu, 2006). SIJVs which are often established by relatively more technologically-advanced non-HMT firms and more technologically-advanced SOEs, is expected to be more technologically advanced than PIJVs, which are commonly established by relatively less technologically-advanced HMT firms and less technologically-advanced POEs. IJVs are also generally more technologically advanced than domestic firms in a transition or developing economy context, as evidenced by empirical studies based in transition or developing economies such as China, Romania and Vietnam (Javorcik & Spatareanu, 2008; Newman, Rand, Talbot, & Tarp, 2014; Tian, 2010). Therefore, the technology gap between SIJVs and domestic firms is expected to be larger than that between PIJVs and domestic firms. There is a greater potential for domestic firms to benefit from intra-industry productivity spillovers from SIJVs than from PIJVs.

Ownership and regulation are the two common types of government involvement in business to achieve political goals (Peng, 2000). An important political goal of developing country governments is to improve domestic firms' productivity via FDI productivity spillovers (Lall, 2000). By investing in a firm, host-country government can impose policy burdens on the firm (Shleifer, 1998). Therefore, SIJVs will be motivated to facilitate the improvement of domestic firms' productivity, thus fulfilling host-country governments' political goal pertaining to inward FDI and domestic

development. For instance, engineers equipped with foreign knowledge from those state invested firms move to domestic firms (Kim, 2001). However, the improvement of domestic firms' productivity often accelerate the innovation of domestic firms and the erosion of the technological advantages of foreign-invested firms, threatening foreign-invested firms' competitiveness in the host market (Perri & Peruffo, 2016). Privately-owned host-country partners in PIJVs are often profit seekers and competitiveness is essential for them to profit in market competition (Boycko, Shleifer, & Vishny, 1996). Therefore, privately-owned host-country partners in PIJVs may discourage PIJVs from assisting domestic firms' productivity improvement. Although the foreign partner in an IJV always minimises the IJV's productivity spillovers to domestic firms (Buckley, Clegg, & Tan, 2004), SIJVs may still commit some time and efforts to help domestic firms improve their productivity due to their policy burdens while PIJVs may not. Although absorptive capacity has been largely interpreted as a function of domestic firms' internal technological capabilities (McDermott & Corredoira, 2010), Eapen (2012) suggests that the spillover source's willingness to facilitate recipient firms' productivity improvement may also affect the recipient firms' absorptive capacity, because it affects the effectiveness of information exchange between the spillover source and receiver. Broader and deeper information exchange between the source and the recipient is essential to materialize FDI productivity spillovers. The absorptive capacity of domestic firms to capture intra-industry productivity spillovers from SIJVs is expected to be stronger than domestic firms to capture intra-industry productivity spillovers from PIJVs. In summary, there is more potential and support for domestic firms to learn from SIJVs than from PIJVs. Thus, we propose

Hypothesis 1. IJVs with state-owned host-country partners generate a greater magnitude of intra-industry productivity spillovers to domestic firms than IJVs with privately-owned host-country partners.

Then we will discuss whether intra-industry productivity spillovers generated by SIJVs or PIJVs are distributed differently between SOEs and POEs. As Chinese SOEs are more technologically-advanced than POEs (Li et al., 2001) and SIJVs are commonly superior to PIJVs in technology, we expect the smaller technology gap (1) between foreign-invested firms and SOEs than between foreign-invested firms and POEs in general and (2) between SIJVs (PIJVs) and SOEs than between SIJVs (PIJVs) and POEs in particular. Compared with POEs, there may be less potential for SOEs to learn from SIJVs or PIJVs.

A firm's technology advancement also contributes to its absorptive capacity, because it determines whether a firm's prior knowledge can facilitate the learning of new related knowledge (Cohen & Levinthal, 1990). Therefore, technology advancement may contribute to SOEs' advantages over POEs in absorbing intra-industry productivity spillovers from foreign-invested firms, including SIJVs and PIJVs.

SOEs also bear policy burdens such as control of strategically important industries, price distortion, job creation, retirement pensions and other social-welfare costs (Lin et al., 1998). Such policy burdens make it difficult to distinguish between the policy-induced losses and SOEs' own operational losses. A general solution is to impose soft budget constraints on SOEs, sustaining their underperformance by financial support from the government (Lin & Tan, 1999). Soft budget constraints may cause SOE managers'

shirking and SOEs' reluctance to pursue technology advancement by learning from foreign-invested firms (Buckley et al., 2002), including SIJVs and PIJVs. In contrast, the operational goal of POEs is profit seeking, and competitiveness is essential for their profitability in market competition (Boycko et al., 1996). Existing research suggests that advanced technology will contribute to a firm's competitiveness and thus profitability (Zahra, 1996). Firms can use advanced technologies to enhance competitiveness by providing new products or processes, changing the rules of competition or resetting industrial boundaries (Utterback, 1994). The operational goal of profit seeking also suggests that POEs have to meet hard budget constraints, running at least break even to survive (Shleifer, 1998). The pressure to survive and profit is expected to drive POEs to learn from foreign-invested firms, including SIJVs and PIJVs. That is to say, SOEs have a weaker incentive than POEs to absorb intra-industry productivity spillovers from SIJVs or PIJVs.

In particular, SOEs' productivity matters to host-country governments, because SOEs' revenues will go to local governments as fiscal income (Chai, 1996), and host-country governments are responsible for SOEs' financial loss (Qian & Roland, 1998). However, SOEs are often found to underperform, partly due to the policy burdens imposed by host-country governments. Policy burdens such as job creation often conflict with SOEs' profitability (Wang, Wang, & Bramley, 2005). By improving SOEs' productivity, SOEs are more likely to contribute to governments' fiscal income rather than asking them for financing after suffering operational losses. Therefore, transition or developing country governments are often keen to improve SOEs' productivity (Park et al., 2006). POEs themselves not host-country governments, are responsible for their own financial losses. Although taxes

from POEs also contribute to host-country governments' fiscal income, POEs are more likely to avoid taxes than SOEs (Ding, Zhang, & Zhang, 2007). This may undermine POEs' contribution to host-country governments' fiscal income. Therefore, we expect that host-country governments will prioritize the improvement of SOEs' productivity. As a result, we argue that, compared with POEs, SOEs' disadvantages in potential and incentives to learn may be more than offset by their advantages in technology advancement and information exchange with the spillover source, in absorbing intra-industry productivity spillovers from SIJVs. Thus, we propose

Hypothesis 2a. IJVs with state-owned host-country partners generate a greater magnitude of intra-industry productivity spillovers to SOEs than to POEs.

However, unlike SIJVs which may facilitate the improvement of domestic firms' productivity because of their policy burdens, PIJVs are reluctant to generate productivity spillovers to both SOEs and POEs, as we discussed in our first hypothesis development. This is due to the threat that productivity spillovers from PIJVs to domestic firms may pose to a PIJV's technological advantages and thus profitability in the host market (Perri & Peruffo, 2016; Zahra, 1996). Since PIJVs have no special reason to assist the improvement of SOEs' or POEs' productivity without further specifications such as an affiliation to the same business group (Belenzon & Berkovitz, 2010), both SOEs and POEs may lack effective information exchange with PIJVs. Since effective information exchange between the source and recipient is crucial to effective spillovers (Eapen, 2012), intra-industry productivity spillovers from PIJVs to both SOEs and POEs may be difficult to materialize. Existing studies also show that effective inter-firm knowledge sharing is difficult, even when

source firms are obligated to commit time and effort for it (Bechky, 2003; Nelson & Winter, 1982; Teece, 1986). Therefore, it could be even more difficult for domestic firms to capture productivity externalities from spillover sources such as PIJVs, which are unwilling to share knowledge with spillover receivers. In this scenario, we expect no significant difference between the magnitude of intra-industry productivity spillovers from PIJVs to SOEs and that of intra-industry productivity spillovers from the same source to POEs.

Nevertheless, through certain channels, intra-industry productivity spillovers from IJVs still happen (Blomström & Sjöholm, 1999; Tian, 2010). PIJVs may protect their internal technologies from domestic firms, but they are incapable of preventing domestic firms from learning from their products sold in the market. Helpman (1997) suggests that domestic firms may attain productivity gains by imitating products. Specifically, firms often imitate products that are closely related to their existing products (Jirjahn & Kraft, 2011). Buckley et al. (2007b) also suggest that domestic firms' technology advancement may help overcome their difficulties in materializing FDI productivity spillovers, because technology advancement determines their prior knowledge to facilitate the learning of new related knowledge (Cohen & Levinthal, 1990). As we discussed before, China's SOEs are likely to be better equipped with prior knowledge to facilitate the learning of new foreign knowledge than POEs. In this scenario, despite SOEs' disadvantages in potential and incentives to learn, we expect that PIJVs will still generate a greater magnitude of intra-industry productivity spillovers to SOEs than to POEs. Taking both scenarios into consideration, we propose

Hypothesis 2b. The magnitude of intra-industry productivity spillovers from IJVs with privately-owned host-country partners to SOEs is not significantly smaller than that of intra-industry productivity spillovers from the same source to POEs.

3.5 Data and Methodology

The data used in this study is collected from the Annual Report of Industrial Enterprise Statistics (ARIES) compiled by the Chinese National Bureau of Statistics (NBS), which contains comprehensive information on industrial firms in mainland China with annual sales of at least five million RMB. Therefore, our empirical tests may only explain intra-industry productivity spillovers from relatively large IJVs to relatively large domestic firms. Despite this limitation, this dataset has been previously used to study productivity spillovers from IJVs in China such as (Tian, 2010) and provide reliable empirical insights. A data set including only manufacturing firms is built, consistent with previous FDI spillover studies (Smarzynska Javorcik, 2004; Tian, 2007; Zhang *et al.*, 2010). A manufacturing firm is defined as the one operating in a 2-digit industry where the Chinese Standard Industrial Classification (SIC) code varies between 13 and 43 in ARIES (GB/T 4754-2002). An IJV is defined as the foreign-invested firm with less than 95% equity share held by the foreign investor, and accordingly a wholly foreign-owned enterprise (WFOE) is defined as the one with at least 95% equity share held by the foreign investor (Cui & Jiang, 2012). A SIJV is defined as the IJV whose host-country share-holder is state-owned. A PIJV is defined as the IJV whose host-country share-holder is privately-owned. We limit our observations to the period between 1998 and 2007 to ensure consistency in the coverage of state-owned- and non-state-owned firms (Zhang et al., 2014).

We only include firms that have data for at least two consecutive years, because we use independent variables with a lag of one year in our estimations. Due to the change of Chinese SIC code in 2002 and the application of new SIC code in 2003 (Holz, 2013), we match the new 4-digit SIC code with the old one for observations before 2003. Then we use the new SIC code for all observations.

We exclude firms with collective ownership, due to difficulties in distinguishing whether a collectively-owned firm is actually controlled by the local government rather than its employees and managers (Jefferson, Rawski, Li, & Yuxin, 2000). We also exclude observations with the annual average employment of less than 6 workers (Javorcik & Spatareanu, 2008). We exclude observations whose (1) 3-digit SIC code or (2) location (province) or (3) ownership mode (SIJV, PIJV, WFOE, SOE or POE) varies from the succeeding year, so we can include variables with a lag of one year in our estimations. Observations with missing data or unrealistic values such as negative values of firm capital are excluded. The final usable sample includes an unbalanced panel of 256396 domestic firms with 685162 firm-year observations and 68381 foreign-invested firms with 195149 firm-year observations, including 3985 SIJVs with 10259 firm-year observations and 23336 PIJVs with 60891 firm-year observations. Operationalisation of variables is listed in Table 10, and all deflators are collected from the China Statistical Yearbook 1999-2008.

Table 10. Variable measurements of Chapter 3

Variable	Description	Example
Log Y	Annual sales of each domestic firm deflated by the aggregate producer price index and take the logarithm value in year t	e.g. (Javorcik & Spatareanu, 2008); Source: ARIES
Log K	Fixed assets of each domestic firm deflated by the aggregate fixed assets index and take the logarithm value in year t	e.g. (Smarzynska Javorcik, 2004); Source: ARIES
Log L	Logarithm value of the annual average employment of each domestic firm in year t	e.g. (Wei & Liu, 2006); Source: ARIES
Log M	Intermediate inputs of each domestic firm deflated by the aggregate producer price index for intermediate inputs and take the logarithm value in year t	e.g. (Du, Harrison, & Jefferson, 2012); Source: ARIES
SIJV presence	The overall capital/labour/fixed assets/sales share of SIJVs in a 3-digit host-country industry in year t-1	-
PIJV presence	The overall capital/labour/fixed assets/sales share of PIJVs in a 3-digit host-country industry in year t-1	-
WFOE presence	The overall capital/labour/fixed assets/sales share of WFOEs in a 3-digit host-country industry in year t-1	e.g. (Tian, 2010); Source: ARIES
SOE	A dummy variable assigned a value of 1 if over 0% of the equity share of a domestic firm is held by domestic state investors and 0 if 100% of the equity share of a domestic firm is held by domestic private investors in year t-1	-
Intangible asset intensity	Intangible assets of each domestic firm divided by its total assets in year t-1	e.g. (Zhang et al., 2014); Source: ARIES
Industrial concentration	3-digit host-country Herfindahl-hirschman index calculated by annual sales in year t-1	e.g. (Sinani & Meyer, 2004); Source: ARIES
Export orientation	Annual export of each domestic firm divided by its annual sales in year t-1	e.g. (Takii, 2005); Source: ARIES
Provincial GDP index	An index assessing the year on year growth of gross domestic product in year t-1.	e.g. (Li, Li, Lyles, & Liu, 2016); Source: China Statistical Yearbook
Provincial marketisation index	An aggregated index assessing the market-based institutional development of each province in year t-1.	e.g. (Wang *et al.*, 2013); Source: NERI index

Consistent with previous FDI spillover research (Aitken & Harrison, 1999), this study adopts an augmented Cobb-Douglas production function. Log

output Y_{ijt} for a domestic firm i in industry j at time t is regressed on the firm's inputs (log capital input K_{ijt}, log labour input L_{ijt} and log intermediate input M_{ijt}), the presence of SIJVs, PIJVs and WFOEs in industry j at time t-1, state ownership of a domestic firm i in industry j at time t-1, interactions between the presence of SIJVs, PIJVs and WFOEs in industry j at time t-1 and state ownership of a domestic firm i in industry j at time t-1, and other regressors as controls. All independent variables (except for log K, log L and log M) are included in the regressions with a lag of one year (Wei & Liu, 2006), to minimise the potential endogeneity problem. The coefficient estimates of regressors containing *SIJV (PIJV) presence* are interpreted as evidence to support intra-industry productivity spillovers from SIJVs (PIJVs) to domestic firms' output. The magnitude of the coefficient for *SIJV (PIJV) presence* reflects the magnitude of productivity spillovers from SIJVs (PIJVs) to domestic firms. A larger and positive coefficient suggests a greater magnitude of productivity spillovers.

To improve the robustness of our estimation results, we use four alternative measures of foreign presence rather than one measure when assessing the spillover effects: the capital/labour/fixed assets/sales share accounted for by all SIJVs/PIJVs/WFOEs in each industry (Gorg & Strobl, 2001). α_{ij} denotes the unobserved effects for a domestic firm i in industry j, and ε_{ijt} is the error term. The vector of controls includes intangible assets, industry concentration, export orientation, provincial GDP index, provincial marketisation index, 2-digit industry dummies, and year dummies. Equation (1) corresponds to the null Model 1 in Table 22, Equation (2) corresponds to Models 2-5 in Table 22 to test our Hypothesis 1, and Equation (3) corresponds to Models 6-9 in Table 22 to test our Hypothesis 2a-2b.

$$\log Y_{ijt} = \beta_1 \log K_{ijt} + \beta_2 \log L_{ijt} + \beta_3 \log M_{ijt} + \beta_4 \text{Controls}_{t-1} + \alpha_{ij} + \varepsilon_{ijt}$$

(1)

$$\log Y_{ijt} = \beta_1 \log K_{ijt} + \beta_2 \log L_{ijt} + \beta_3 \log M_{ijt} + \beta_4 \text{SIJV presence}_{jt-1} + \beta_5 \text{PIJV presence}_{jt-1} + \beta_6 \text{WFOE presence}_{jt-1} + \beta_7 \text{SOE}_{jt-1} + \beta_8 \text{Controls}_{t-1} + \alpha_{ij} + \varepsilon_{ijt}$$

(2)

$$\log Y_{ijt} = \beta_1 \log K_{ijt} + \beta_2 \log L_{ijt} + \beta_3 \log M_{ijt} + \beta_4 \text{SIJV presence}_{jt-1} + \beta_5 \text{PIJV presence}_{jt-1} + \beta_6 \text{SIJV presence}_{jt-1} \times \text{SOE}_{ijt-1} + \beta_7 \text{PIJV presence}_{jt-1} \times \text{SOE}_{ijt-1} + \beta_8 \text{WFOE presence}_{jt-1} + \beta_9 \text{WFOE presence}_{jt-1} \times \text{SOE}_{ijt-1} + \beta_{10} \text{SOE}_{jt-1} + \beta_{11} \text{Controls}_{t-1} + \alpha_{ij} + \varepsilon_{ijt}$$

(3)

3.6 Empirical results

Table 11 presents the descriptive statistics and correlations of the variables, except for year dummies and industry dummies for space reasons. Table 12 reports firm-fixed effect models of individual domestic firms' production function. We used panel OLS regression (xtreg in STATA) to estimate the models because the data is longitudinal panel data and the dependent variable is continuous (Harbord & Higgins, 2008). Pooled OLS regression is not adopted because the Breusch-Pagan Lagrange multiplier test shows the existence of unobserved individual effects (Torres-Reyna, 2007). Random-effects OLS regression is not adopted because the Hausman test shows the existence of a correlation between unobserved individual effects and independent variables (Wooldridge, 2010). Standard errors are clustered at

the firm level to correct for potential heteroscedasticity. All continuous independent variables are mean-centered before calculating the interaction terms, to minimise the potential for multicollinearity and make it easier to interpret interaction effects (Yu et al., 2015).

	Variables	N	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	Log Y	880399	10.17	1.22	1																					
2	Log K	879719	8.50	1.67	0.63*	1																				
3	Log L	881559	4.87	1.12	0.61*	0.63*	1																			
4	Log M	880255	9.84	1.25	0.97*	0.61*	0.59*	1																		
5	SIIV presence (capital)	882047	0.04	0.05	-0.02*	0.12*	0.08*	0.00*	1																	
6	PIIV presence (capital)	882047	0.13	0.07	0.01*	0.01*	0.01*	0.01*	0.17*	1																
7	WFOE presence (capital)	882047	0.29	0.19	-0.07*	-0.15*	0.03*	-0.07*	-0.24*	-0.04*	1															
8	SIIV presence (labour)	882047	0.01	0.02	0.01*	0.12*	0.09*	0.03*	0.79*	0.18*	-0.15*	1														
9	PIIV presence (labour)	882047	0.08	0.05	-0.03*	-0.11*	0.01*	-0.03*	-0.12*	0.60*	0.39*	-0.01*	1													
10	WFOE presence (labour)	882047	0.19	0.17	-0.03*	-0.13*	0.07*	-0.04*	-0.26*	0.01*	0.89*	-0.16*	0.40*	1												
11	SIIV presence (fixed assets)	882047	0.03	0.04	-0.00*	0.11*	0.08*	0.01*	0.92*	0.27*	-0.21*	0.83*	-0.03*	-0.21*	1											
12	PIIV presence (fixed assets)	882047	0.11	0.07	0.01*	-0.03*	-0.01*	0.01*	0.08*	0.91*	0.08*	0.08*	0.69*	0.13*	0.18*	1										
13	WFOE presence (fixed assets)	882047	0.23	0.17	-0.05*	-0.12*	0.03*	-0.05*	-0.21*	-0.04*	0.96*	-0.12*	0.34*	0.91*	-0.18*	0.06*	1									
14	SIIV presence (sales)	882047	0.02	0.04	0.02*	0.12*	0.08*	0.03*	0.81*	0.32*	-0.21*	0.80*	0.01*	-0.18*	0.86*	0.23*	-0.167*	1								
15	PIIV presence (sales)	882047	0.12	0.07	0.01*	-0.02*	0.03*	0.01*	0.11*	0.84*	0.13*	0.15*	0.76*	0.19*	0.21*	0.85*	0.13*	0.29*	1							
16	WFOE presence (sales)	882047	0.21	0.16	-0.03*	-0.11*	0.06*	-0.04*	-0.19*	-0.01*	0.92*	-0.08*	0.35*	0.93*	-0.16*	0.08*	0.95*	-0.14*	0.15*	1						
17	SOE	68516 2	0.11	0.31	0.06*	0.31*	0.32*	0.07*	0.28*	0.06*	-0.19*	0.24*	-0.18*	-0.18*	0.24*	-0.12*	-0.17*	0.23*	-0.07*	-0.15*	1					
18	Intangible asset intensity	882047	0.02	0.06	0.03*	0.12*	0.06*	0.03*	0.00	0.00*	-0.02*	0.01*	-0.01*	-0.03*	0.00*	0.00	-0.02*	0.01*	0.00*	-0.02*	-0.00*	1				
19	Industry concentra tion	882047	0.01	0.02	0.07*	0.11*	0.07*	0.08*	0.15*	0.11*	-0.13*	0.22*	-0.02*	-0.06*	0.18*	0.05*	-0.09*	0.23*	0.14*	-0.00*	0.13*	-0.00*	1			
20	Export orientatio n	882047	0.20	0.36	0.05*	-0.02*	0.19*	0.04*	-0.11*	0.03*	0.35*	-0.07*	0.27*	0.38*	-0.10*	0.09*	0.32*	-0.09*	0.13*	0.34*	-0.08*	0.13*	-0.01*	1		
21	GDP index	882111	112.57	2.17	0.06*	-0.12*	-0.15*	0.04*	-0.44*	0.01*	0.16*	-0.42*	0.14*	0.16*	-0.41*	0.10*	0.14*	-0.35*	0.03*	0.09*	-0.36*	-0.00	-0.20*	0.04*	1	
22	Marketisa -tion index	882078	7.48	1.85	0.00	-0.18*	-0.17*	0.00	-0.39*	0.07*	0.32*	-0.37*	0.25*	0.31*	-0.36*	0.16*	0.28*	-0.31*	0.12*	0.24*	-0.38*	0.01*	-0.18*	0.20*	0.67*	1

Table 11. Descriptive statistics and correlation matrix of Chapter 3

* $p<0.05$.

Table 12. Fixed-effects panel OLS regressions of Chapter 3

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
	Null	Capital	Labour	Fixed assets	Sales	Capital	Labour	Fixed assets	Sales
Log K	0.03***	0.03***	0.03***	0.03***	0.03***	0.03***	0.03***	0.03***	0.03***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Log L	0.12***	0.12***	0.12***	0.12***	0.12***	0.12***	0.12***	0.12***	0.12***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Log M	0.72***	0.72***	0.72***	0.72***	0.72***	0.72***	0.72***	0.72***	0.72***
	(0.01)	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Predictors									
SIJV presence		0.09***	0.10*	0.08***	0.14***	0.02	0.00	0.01	0.07*
		(0.02)	(0.04)	(0.02)	(0.03)	(0.02)	(0.04)	(0.02)	(0.03)
PIJV presence		0.02	-0.00	0.02	0.04**	0.01	-0.01	0.02	0.03*
		(0.01)	(0.02)	(0.01)	(0.014)	(0.01)	(0.02)	(0.01)	(0.02)
SIJV presence × SOE						0.31***	0.50***	0.43***	0.32***
						(0.05)	(0.11)	(0.07)	(0.07)
PIJV presence × SOE						0.00	0.11	-0.02	0.07
						(0.04)	(0.08)	(0.05)	(0.04)
Moderator									
SOE		-0.03***	-0.03***	-0.03***	-0.03***	-0.04***	-0.04***	-0.04***	-0.04***
		(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Controls									
WFOE presence		-0.02*	-0.03**	-0.02	0.00	-0.02	-0.03*	-0.01	0.01
		(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
WFOE presence × SOE						-0.03	-0.09	-0.02	-0.03
						(0.03)	(0.05)	(0.03)	(0.04)
Intangible asset intensity	-0.04***	-0.05***	-0.05***	-0.05***	-0.05***	-0.05***	-0.045***	-0.05***	-0.05***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Industrial concentration	-0.07	-0.06	-0.07	-0.06	-0.06	-0.05	-0.07	-0.06	-0.05
	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Export orientation	0.01***	0.01***	0.01***	0.01***	0.01***	0.01***	0.01***	0.01***	0.01***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Provincial GDP index	0.01***	0.01***	0.01***	0.01***	0.01***	0.01***	0.01***	0.01***	0.01***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Provincial marketisation index	0.01***	0.01***	0.01***	0.01***	0.01***	0.01***	0.01***	0.01***	0.01***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Constant	9.90***	9.89***	9.89***	9.89***	9.89***	9.88***	9.89***	9.89***	9.89***
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Test: SIJV presence = PIJV presence	-	F=11.00***	F=5.42*	F=6.31*	F=9.94**	-	-	-	-
N	664622	664622	664622	664622	664622	664622	664622	664622	664622
F value	7458***	6868***	6485***	6879***	6488***	6876***	6491***	6880***	6498***
Within R2	0.7653	0.7654	0.7654	0.7653	0.7654	0.7653	0.7654	0.7654	0.7654
Total R2	0.9282	0.9284	0.9285	0.9284	0.9285	0.9283	0.9284	0.9283	0.9283

Robust standard errors in parentheses. * p<0.05, ** p<0.01, *** p<0.001.

In Models 2-5 in Table 12, we used the Wald test to examine whether the coefficient of *SIJV presence* is statistically different from that of *PIJV presence*. The null hypothesis of this Wald test is that the coefficient of *SIJV presence* equals that of *PIJV presence*. In our results, the coefficients of *SIJV presence* are positive and significant (p<0.001 in Models 2, 4 and 5, and p<0.05 in Model 3) in Models 2-5 in Table 12, and the values of the coefficients of *SIJV presence* are consistently greater than those of *PIJV*

presence and the differences are statistically significant ($p<0.001$ in Model 2, $p<0.01$ in model 5, and $p<0.05$ Models 3 and 4), meaning that the null hypothesis is rejected or the magnitude of intra-industry productivity spillovers from SIJVs to domestic firms is greater than that of intra-industry productivity spillovers from PIJVs to domestic firms, through all the four spillover channels. Hypothesis 1 is thus supported.

Dawson (2014) suggests that whether a moderating effect exists depends on the significance of the interaction term. In models 6-9 in Table 12, the coefficients of *SIJV presence* are positive, and the coefficients of the interaction term *SIJV presence* × *SOE* are positive and significant ($p<0.001$). These results depict that the positive relationship between the intra-industry presence of SIJVs and the productivity of a domestic firm in the industry is stronger when the domestic firm is state-owned (or weaker when the domestic firm is privately-owned), regarding all the four spillover channels. Thus, Hypothesis 2a is supported.

In Models 6-8 in Table 12, the coefficients of *PIJV presence* are insignificant, and the coefficients of the interaction term *PIJV presence* × *SOE* are insignificant ($p>0.05$). These findings demonstrate that (1) the intra-industry presence of PIJVs has no significant impact on the productivity of SOEs or POEs through channels such as capital, labour or fixed assets and (2) state ownership of domestic firms has no significant influence on the distribution of productivity spillovers from PIJVs. In Model 9 in Table 12, the coefficient of *PIJV presence* is positive and significant and the coefficient of the interaction term *PIJV presence* × *SOE* is insignificant ($p>0.05$). This finding illustrates that (1) the intra-industry presence of PIJVs significantly affects

the productivity of SOEs or POEs through channels such as sales but (2) the state ownership of domestic firms has no significant impact on the distribution of productivity spillovers from PIJVs. In summary, our results suggest that there is no difference between SOEs and POEs in absorbing intra-industry productivity spillovers from PIJVs. Since we hypothesized that (compared with POEs) SOEs are not disadvantaged in capturing intra-industry productivity spillovers from PIJVs, Hypothesize 2b is partly supported. We find no channel via which a greater magnitude of productivity spillovers occur from PIJVs to SOEs than to POEs.

3.7 Discussions and conclusions

Our study was motivated by the desire to better understand how productivity spillovers from IJVs may occur in a transition market. It contributes to the literature by exploring the relationship between state ownership of the host-country IJV partner and the magnitude of intra-industry productivity spillovers from IJVs to domestic firms. As noted earlier, prior research has primarily examined how state ownership affects FDI productivity spillovers by investigating the distribution of FDI spillovers between SOEs and POEs. While several studies have acknowledged that state ownership of the host-country IJV partner is a relevant dimension in assessing IJVs' strategies and performance (Luo, 1997; Nguyen & Meyer, 2004), ours is the first one that examines the role of state ownership of the host-country IJV partner in productivity spillovers from IJVs.

We drew upon the institutional perspective (Du et al., 2011; Peng, Wang, & Jiang, 2008) to examine how state ownership of the host-country IJV partner may determine (1) the technology gap between IJVs and domestic firms and

(2) the absorptive capacity of domestic firms to capture productivity spillovers from IJVs, and hence productivity spillovers from IJVs to domestic firms. Using a comprehensive panel dataset of manufacturing firms in China during 1998-2007, we have found that the magnitude of intra-industry productivity spillovers from IJVs to domestic firms is greater when those host-country IJV partner are state-owned rather than privately-owned, the attribute that is associated with IJVs' technology advancement and obligations to domestic firms. Compared with PIJVs, SIJVs are generally more technologically advanced for domestic firms to learn and have a stronger incentive to facilitate the learning process. We also find a greater magnitude of intra-industry productivity spillovers from SIJVs to SOEs than to POEs, but we find no significant difference between SOEs and POEs in absorbing productivity spillovers from PIJVs. This result suggests that productivity spillovers from IJVs depend on not only state ownership of the host-country IJV partner but also on state ownership of domestic firms. In absorbing productivity spillovers from SIJVs, SOEs have advantages in technology and government support, compared with POEs. This finding also suggests that there may be a limit on the extent to which state ownership of domestic firms affects productivity spillovers from IJVs because of limited opportunities-such as imitating PIJVs' products-for both SOEs and POEs to learn from PIJVs. These findings are consistent with our argument that state ownership of the host-country IJV partner determines the potential for domestic firms to learn from IJVs and domestic firms' capabilities of learning from IJVs.

Our focus on the role of state ownership of the host-country partner in productivity spillovers from IJVs differs from yet complements some existing

understanding in this field. Blomström and Sjöholm (1999) are focused on the level of foreign ownership in IJVs and find that both the presence of foreign majority-owned IJVs and that of foreign minority-owned IJVs generated productivity spillovers to domestic firms and the magnitude of spillovers are similar. Javorcik and Spatareanu (2008) separate the presence of IJVs at the industry level. They find that the inter-industry presence of IJVs increases domestic firms' productivity while the intra-industry presence of IJVs reduces domestic firms' productivity. These studies advance the literature by examining the heterogeneous nature of the presence of IJVs. Our findings suggest that, by breaking down IJVs into IJVs with state-owned host-country partners and those with privately-owned host-country partners, new insight has been provided on productivity spillovers from IJVs. Our methodological approach adds a crucial new dimension to FDI spillover study and may stimulate future research in this direction.

Our findings on the contingent effect of state ownership of domestic firms also partly differ from but complement prior research in this area. Aware of the status of domestic firms as productivity receivers in the spillover relationship, existing studies have examined how state ownership of domestic firms can influence the extent to which they can capture FDI spillovers (Li et al., 2001; Lin, Liu, & Zhang, 2009). Nevertheless, foreign-invested firms, as the spillover source firms in the FDI spillover process, have largely been dealt with as "black boxes" (Spencer, 2008). Our findings suggest that state ownership of the host-country IJV partner influences the distribution of their productivity spillovers between SOEs and POEs. Contrasts with Xiao and Park (2017) who suggest that SOEs are inferior to POEs in absorbing FDI spillovers, our results are consistent with Buckley et al. (2007b) that SOEs

are superior to POEs in capturing FDI spillovers in certain contexts. Our research, together with other research in this field, illustrates that connecting state ownership of both IJV partners and domestic firms is in need to expand our understanding of how state ownership affect the spillovers from IJVs to domestic firms.

There are limitations to our study, which may have implications for future research. First, we consider only intra-industry productivity spillovers from IJVs. Since inward FDI may also generate inter-industry productivity spillovers through transactional linkages (Liu et al., 2009), future research may examine our research questions in inter-industry productivity spillovers. Second, this study has its limitations regarding sampling. Firms in our sample are relatively large firms. Due to data availability in ARIES, we include only firms with annual sales of at least five million RMB in our sample. Since small and medium-sized firms may be subject to liability of smallness (Maekelburger et al., 2012), their responses to FDI productivity spillovers may differ from that of larger firms and thus the spillover effect. Future research may examine whether our findings are consistent with smaller firms. We also concentrate on productivity spillovers from IJVs to domestic firms in China only. Although we believe that our theoretical arguments apply to a wider scope of transition countries, a single host-country sample may not fully reveal that potential. Compared to other transition economies, such as Vietnam, China has some unique attributes, including earlier start in SOE reform (Vu, 2009). Future research may examine whether our findings are consistent in other transition economies. Third, we consider only state-owned host-country IJV partners and privately-owned host-country IJV partners. Some existing FDI spillover literature suggests that collectively-owned

enterprises (COEs) may also play an important role in FDI spillovers (Buckley, Clegg, & Wang, 2004) and some foreign investors may also cooperate with COEs to form IJVs (Luo, 2002). However, for instance, in China some COEs are actually controlled by domestic governments (Jefferson *et al.*, 2000). Empirically, it is difficult to distinguish those COEs controlled by their managers and employees from those controlled by domestic governments. Since the attitude of managers and employees towards FDI productivity spillovers is often inconsistent with that of domestic governments (Buckley et al., 2002), it becomes difficult to explain the empirical results pertaining to productivity spillovers from IJVs with collectively-owned host-country partners, which may impose limits on future research in this direction. Last but not least, we also do not have detailed information about IJV partners' investment motivations. Therefore, we could not include investment motivations in either theoretical discussion or empirical test. Existing literature suggests that investment motivations may either directly (Driffield & Love, 2007) or interact with other factors to influence FDI spillovers (Girma, 2005). Future research may explore the interaction effect of state ownership of the host-country IJV partner and investment motivations on productivity spillovers from IJVs. Such research efforts cannot only advance our knowledge on productivity spillovers from IJVs but also offer practical implications on how transition economies can benefit from IJVs.

This study also provides valuable managerial and policy implications. For IJV managers, they need to balance the costs and benefits of cooperating with state-owned host-country partners. Our findings confirm that SIJVs generate a significant amount of intra-industry productivity spillovers to Chinese

domestic firms, while PIJVs generate very limited productivity spillovers. Productivity spillovers will enhance the innovation of domestic firms and erode the technological advantages of foreign-invested firms (Perri & Peruffo, 2016), and these are the costs of cooperating with state-owned host-country partners. The benefits of cooperating with state-owned host-country partners can be market entry into state-controlled industries or favourable government policies (Brouthers & Bamossy, 1997; Ma et al., 2006). For host-country policymakers, the conventional belief that establishing IJVs will assist domestic firms' absorption of foreign knowledge needs to be altered. Our findings suggest that the establishment of PIJVs can hardly generate intra-industry productivity spillovers to Chinese domestic firms. Instead, the establishment of SIJVs not only significantly increase Chinese domestic firms' productivity but also benefit SOEs more than POEs, which is compatible with China's political goal of SOE reform that SOEs' performance needs to be improved (Park et al., 2006). Therefore, for transition or emerging countries aiming at improving domestic firms' productivity, especially SOEs' productivity, via inward FDI, their policies on inward FDI should give more weight and support to the establishment of SIJVs than PIJVs.

In conclusion, to the limit of our knowledge, this is the first empirical study that explicitly compares productivity spillovers from SIJVs and productivity spillovers from PIJVs and the distribution of productivity spillovers from those IJVs between SOEs and POEs. Our findings deepen our knowledge of state ownership as a set of institutional constraints on firm behaviours across IJV life-cycle stages and should encourage further study on this interesting and promising topic.

Chapter 4. Conversion of an International Joint Venture into a Wholly Foreign-owned Enterprise under Host-Country Institutional constraints

4.1 Abstract

This chapter intends to explore new mechanisms through which host-country institutions constrain firm behaviours at the stage of international joint venture (IJV) termination. Specifically, we explore whether host-country institutions constrain the conversion of an IJV into a wholly foreign-owned enterprise (WFOE) through two informal mechanisms - rates of WFOEs/ successful WFOEs in a host industry and host-regional SOE dominance - and two formal mechanisms – host-regional centrally-planned allocation of economic resources (CAER) and FDI-restricted industry (excluding WFOE-only industries). From an institutional view, the conversion of an IJV into a WFOE (CIW) is an IJV's response to an increase in a WFOE's legitimate status relative to an IJV. Hypotheses are tested on panel data from 16583 manufacturing IJVs in China between 2005 and 2006. We find (1) positive relationships between rates of WFOEs/highly profitable WFOEs/high market-share WFOEs in a host industry and the CIW and (2) a negative relationship between host-regional SOE dominance and the CIW. We also find no significant impact of host-country institutions on the CIW through the two formal mechanisms.

4.2 Introduction

In this study, we examine the impact of host-country institutions on the conversion of an international joint venture (IJV) into a wholly foreign-owned enterprise (WFOE). Previous research suggests that the conversion of an IJV

into a WFOE (CIW) has several important implications for a firm's international operations. First, resource dependence-based literature suggests that the CIW results from the foreign partner's acquisition of the key resources possessed or controlled by the local partner (Hennart, Roehl, & Zietlow, 1999). Second, organisational learning-based literature demonstrates that the CIW occurs when the foreign partner learns that the local partner is worthy of acquisition (Balakrishnan & Koza, 1993). Third, real option-based literature proposes that the CIW is how the foreign partner of an IJV can fully exploit the value of the firm, when the value of an IJV increases (Cuypers & Martin, 2007). Fourth, transaction cost-based literature advocates that the CIW is a foreign-invested firm's organisational change towards a more efficient governance mode, when the foreign partner has gained independent access to local complementary inputs or an increase in asset specificity (Chang, 2019) or internal uncertainty leads to an increase in governance costs for the firm to combat opportunism. A foreign-invested firm organized as the high-control WFOE mode suffers a less increase in governance costs than one organized as the risk-sharing IJV mode (Anderson & Gatignon, 1986). Last but not least, institution-based literature argues that the CIW reflects a decrease in institutional pressures imposed on WFOEs relative to those imposed on IJVs (Deng, 2001).

Compared with resource dependence-based-, organisational learning-based- and real option-based literature, transaction cost-based- and institution-based literature may provide more specific knowledge on the determinants of the CIW. Resource dependence-based literature considers the CIW as one outcome of the change of resource dependency between IJV partners and ignores differentiating the CIW from other outcomes of the change of

resource dependency between IJV partners, which include the redistribution of equity share between IJV partners (Steensma et al., 2008). Organisational learning-based literature considers the CIW as one outcome of the foreign partner's learning of the local partner and ignores differentiating the CIW from other outcomes of the foreign partner's learning of the local partner which include the termination of the IJV (Balakrishnan & Koza, 1993). Existing real option-based literature considers the CIW as one outcome of the foreign partner's exercise of its call options in an IJV and therefore ignores differentiating the CIW from other outcomes of exercise of call options, which include the conversion of a foreign minority shareholder into a foreign majority shareholder (Folta & Miller, 2002; Kogut, 1991). In contrast, transaction cost-based literature explores the mechanisms through which transaction cost-based factors such as access to local complementary inputs and asset specificity may influence a foreign-invested firm's decision on the CIW (Puck et al., 2009). Institution-based literature explores host-country institutional determinants of the CIW, such as the reduction in host-country regulations on the WFOE mode (Deng, 2001).

While existing transaction cost-based literature on the determinants of the CIW is relatively mature, existing institution-based literature on the determinants of the CIW is still adolescent. A transaction cost-based explanation of the CIW has been provided by Puck, Holtbrügge and Mohr (Puck et al., 2009) in terms of three transaction cost-based factors: access to local complementary inputs, asset specificity and uncertainty. Access to local complementary inputs (or assets) is the central explanatory factor in Hennart's (2009) transaction cost-based framework, while asset specificity and uncertainty are two of the three principal explanatory factors (the other

one is frequency of transactions) in Williamson's (1985) transaction cost-based framework. In addition, frequency of transactions is widely considered unrelated to a firm's choice between the IJV mode and the WFOE mode (Brouthers & Hennart, 2007). Institution-based literature has examined the impact of parent-firm isomorphism and foreign direct investment (FDI) regulations on the CIW (Deng, 2001; Puck et al., 2009). Although not only on the CIW, existing institution-based literature also suggests that host-country institutional development (Chang, 2019; Driffield et al., 2016; Meschi et al., 2016), host-country national culture (Iriyama et al., 2014), IJV legitimacy (Lu & Xu, 2006) and cross-national institutional distance (Gaur & Lu, 2007; Sim & Ali, 2000) may also influence an IJV's post-entry ownership change. When studying the impact of host-country institutions on the CIW, existing research focuses on the impact of formal institutions (Deng, 2001; Puck et al., 2009) or institutional barriers (Chang, 2019), but not that of informal institutions. This is the first research gap that we intend to fill in this study. The institutional view suggests that a foreign-invested firm's strategies are subject to both formal- and informal institutional pressures (Peng et al., 2008; Yiu & Makino, 2002). We propose that host-country institutions are likely to shape the institutional pressures imposed on IJVs relative to those imposed on WFOEs via two informal mechanisms: inter-organisational imitation and state ownership. Imitation is often a foreign-invested firm's basic response to isomorphic pressures in the same organisational field (Meyer & Rowan, 1977). Inter-organisational imitation may convince foreign-invested firms that strategies pervasively adopted by other foreign-invested firms or successful strategies adopted by other foreign-invested firms are more likely to help them survive and prosper (Lu, 2002). While

commonly adopted practices reduce the risks that those firms are exposed to in an unfamiliar environment, successful examples direct those firms' organisational learning by encouraging practices that produce positive outcomes and discouraging those that produce negative outcomes (Haunschild & Miner, 1997). State ownership is a key institutional arrangement in transition economies, and SOEs play an important role in shaping the local institutional environment (Meyer & Nguyen, 2005). Regional SOE dominance often implies that the local environment is unfriendly to foreign-invested firms (Liao, 2015). Foreign-invested firms are expected to work harder on attaining local legitimacy in such subnational regions.

When exploring how host-country formal institutions affect the CIW, prior studies concentrate on the impact of FDI regulations, especially the impact of the complexity of FDI regulations (Puck et al., 2009), but not other dimensions of host-country formal institutions and FDI regulations. This is the second research gap that we intend to close in this study. The institutional view also suggests that a foreign-invested firm's strategies face pressures from different dimensions or sub-dimensions of formal institutions (Meyer *et al.*, 2014). In particular, regarding other dimensions of host-country formal institutions, the government control of resource allocation is common across transition economies (Xu, 2011), because those economies are used to centrally-planned systems and market-based reforms are not finished yet. Foreign-invested firms are under pressures to meet the regional government's expectations if they need access to some local resources. As for other dimensions of FDI regulations than the complexity of FDI regulations, host-country governments will normally distinguish between FDI-restricted

industries and non-restricted industries (Lu & Ma, 2008), due to their concerns about domestic development or national security. In FDI-restricted industries, there are limits on the number or amount of investments that each foreign-invested firm can make. Inspections and government interferences are expected to be strong in those industries. Therefore, we propose that these formal institutional pressures may induce foreign-invested firms to show more local adaptations than those in other industries or regions, in terms of the CIW strategy.

We apply these theoretical arguments in foreign-invested firms in China, which has been a major receiver of foreign direct investment for decades. As a transition economy, SOEs (Liao, 2015), FDI restrictions (Lu & Ma, 2008) and government control of economic resources (Xu, 2011) significantly affect the environment in which foreign-invested firms operate. We tested our hypotheses on an unbalanced panel dataset of 16583 manufacturing IJVs between 2005 and 2006. Our results show how different dimensions and/or sub-dimensions of host formal- or informal institutions shape the CIW strategy of IJVs. We contribute to the CIW literature in two important ways. First, we expand host-country institutional determinants of the CIW. Second, we expand the formal mechanisms through which host-country institutions may affect the CIW, from FDI regulations to other formal mechanisms such as resource allocation institutions.

This study may also provide valuable managerial and policy implications. For IJV managers, this study may indicate whether the CIW is a legitimate response to host-country informal institutions such as inter-organisational imitation and state ownership or host-country formal institutions such as

resource allocation institutions and FDI regulations, since legitimate firm behaviours are more likely to sustain a firm's survival and prosperity (Dacin et al., 2007). For host-country policymakers, this study may suggest whether those host-country institutions, as mentioned above, may create an unfriendly environment for WFOEs. To attract foreign investors which are unwilling to joint venturing with local firms, the host government should alter those host-country institutions to provide WFOEs with a friendly environment.

The rest of this essay is organized as follows. In the next section, we summarise existing institution-based CIW literature and address the research gap that we intend to fill in this study. This is followed by the development of hypotheses. Then we report our research methods and empirical results. Finally, we discuss the main contributions and implications of our study for both research and practice.

4.3 Literature review

Table 13 Important theoretical frameworks adopted in research on the conversion of an IJV's ownership mode

Author(s)	Focus	Theory/paradigm	Main arguments
(Cyert & March, 1963)	Antecedents	Organisational learning	The acquisition of better knowledge and understanding can improve an organisation's actions.
(Emerson, 1962; Pfeffer & Salancik, 1978)	Antecedents	Resource dependence	An organisation's possession or control of key resources may make other organisations dependent on that organisation.
(Myers, 1977)	Antecedents	Real option	The value of a firm is affected by the present value of options to make future investments on possibly favourable terms.
(North, 1990; Scott, 1995a)	Antecedents	Institutions	Institutions (1) establish incentives and business practices that influence an organisation's strategy making and (2) shape an organisation's abilities to implement strategies.
(Williamson, 1975, 1985)	Antecedents	Transaction cost	The costs of searching for, negotiating, and securing an agreement determines the governance structure of the agreement.

The CIW is part of a foreign-invested firm's ownership mode strategy (Hennart & Slangen, 2014). Questions on the ownership mode are among the

most key questions in international business study (Shaver, 2013). A foreign-invested firm's ownership mode strategy determines whether it adopts the IJV mode or the WFOE mode (Brouthers & Hennart, 2007). A foreign-invested firm's timing of exercising of the strategy can be at the time of entry or post-entry. The CIW belongs to a foreign-invested firm's post-entry ownership mode strategy. The CIW is an IJV's strategic response to (1) the termination of the foreign partner's resource dependency on the local partner by resource dependence-based literature (Yan & Zeng, 1999); (2) the foreign partner's acquisition of knowledge and understanding that there are potential benefits in acquiring the local partner; (3) an increase in its value proposed by real option-based literature (Cuypers & Martin, 2007); (4) an increase in asset specificity or internal uncertainty or a decrease in external uncertainty or local complementary inputs indicated by transaction cost-based literature (Puck et al., 2009); or (5) an increase in institutional pressures imposed on WFOEs relative to those imposed on IJVs (Deng, 2001). Important theoretical frameworks adopted in CIW-related research is listed below in Table 13. This study explores the CIW from an institutional view.

Institution-based literature explores the interaction between institutions and organisations, and focuses on how institutions shape a firm's behaviour through formal and/or informal mechanisms (Scott, 1995a). Formal institutions refer to laws, regulations and their supporting apparatuses (North, 1990). Informal institutions refer to socially shared rules and norms, and understandings that are "created, communicated, and enforced outside of officially sanctioned channels" (Helmke & Levitsky, 2004). Legitimacy comes from a firm's conformity to institutional constraints and legitimate firm behaviours are more likely to sustain a firm's survival and prosperity

(Dacin et al., 2007). According to the institutional view, institutional elements must be taken into account in determining an IJV's post-entry ownership change. As for home-country institutions, increasing internal isomorphic pressures from the parent firm may lead to the conversion of its IJVs into WFOEs, since the local partner in the IJV may disagree with the parent firm's objectives or practices (Puck et al., 2009). Regarding host-country institutions, reduced FDI regulations may make it more affordable for IJVs to convert into WFOEs, because many IJVs are initially formed due to host-country governments' strong surveillance on WFOEs (Deng, 2001). FDI regulations refer to rules or laws made and maintained by the host-country government to protect local industries and national interests (Cui & Jiang, 2012). Compared with the WFOE mode, the IJV mode is subject to less regulative pressures from host-country governments, since local partners can leverage legitimacy for the IJV. Local partners are also more familiar with local rules and norms than foreign-invested firms and thus facilitate conformity. Chang (2019) also suggests that formal or informal regional institutional barriers may prevent the CIW in a host region. Although not only on the CIW, existing institution-based literature suggests that the foreign partner tend to reduce its equity share in an IJV in host countries characterised by corruption, because increase the share of the local partner may motivate the local partner to act in the best interest of the IJV, when faced with the opaqueness induced by corruption (Driffield et al., 2016). Driffield, Mickiewicz and Temouri (2016) also indicate that the development of the local equity market may facilitate the local partner's acquisition of capital from the local market and therefore reduce its dependency on the foreign partner for capital, which may consequently reduce the foreign partner's equity share in an IJV. Iriyama, Shi

and Prescott (2014) suggest that an IJV is more likely to experience ownership change if the local partner is from a collectivism (compared with individualism) country, because of difficulties in developing out-group trust with partners from collectivism countries. Sim and Ali (2000) suggest that the psychic distance between the host and home country positively affects likelihood of ownership change in an IJV, since the differences between the foreign partner and the local partners may lead to the instability of an IJV and consequently the change of ownership. In addition, the normative distance between the host and home country (Gaur & Lu, 2007), an IJV's legitimacy status (Lu & Xu, 2006) and institutional alignments (Meschi et al., 2016) are also institutional factors which are found to influence the likelihood of IJV termination. Important empirical findings of institution-related research on IJV ownership change are listed below in Table 14.

Table 14 Important empirical findings of institution-related research on the conversion of an IJV's ownership mode

Author(s)/ year	Focus	Theoretical framework	Level of analysis	Home country	Host country	Main findings
Host-country institutions and the CIW						
(Brouthers & Bamossy, 2006)	Privatisation of SOE	Transaction cost	Firm	France	Romania	The privatisation of the state-owned local partner may facilitate an MNE's CIW strategy.
(Chang, 2019)	Institutional barrier	Transaction cost	Firm	Multiple	China	The CIW is more likely to happen in a host region with lower institutional barriers.
(Deng, 2001)	FDI regulations	-	Firm	Multiple	China	An IJV, which are initially formed due to host-country governments' ownership control, may convert into a WFOE when such control is relaxed.
(Puck et al., 2009)	FDI regulations	Institution and transaction cost	Firm	Multiple	China	MNEs are more in need of local partners to deal with complex host-country FDI regulations and therefore reluctant to implement the CIW strategy in such contexts.
Home-country institutions and the CIW						
(Puck et al., 2009)	Internal isomorphism	Institution and transaction cost	Firm	Multiple	China	High internal isomorphism is likely to increase conflicts between an MNE and its local partners, which may push the full integration of the MNE.

Institutions and IJV ownership change						
(Blodgett, 1991)	Host-country FDI regulations	Bargaining	Firm	Multiple	Multiple	A host-country government's ownership control may give the local partner an advantage, which is termed "government suasion", in expanding its ownership position in an IJV.
(Blodgett, 1992)	Host-country FDI regulations	Bargaining	Firm	U. S.	Multiple	The foreign partner's home- country FDI regulations negatively affect the likelihood of ownership change in an IJV.
(Chang, 2019)	Host-country Institutional barrier	Incomplete contract (transaction cost)	Firm	Multiple	China	The conversion of IJVs into wholly local-owned enterprises is more likely to happen in a host region with higher institutional barriers.
(Driffield et al., 2016)	Host-country Institutional development	Property rights (resource dependence and transaction cost)	Firm	Multiple	Multiple	Shift from majority to minority foreign ownership is (1) more likely to happen in a host country with developed equity market and (2) less likely to happen in a host country characterised by corruption.
(Franko, 1989)	Host-country FDI Ownership control	Barganing and internalisation	Firm	U. S.	Less-developed countries	Host-country governmental ownership constraint may encourage US MNEs to increase their ownership share in IJVs in less-developed countries.
(Gaur & Lu, 2007)	Institutional distance	Institution and organisational learning	Firm	Japan	Multiple	There is a negative interaction effect of normative distance and the level of foreign ownership on the likelihood of IJV termination.
(Iriyama et al., 2014)	Host-country National culture	Social exchange (resource dependence and institution)	Firm	Japan	Multiple	An IJV is more likely to experience ownership change if the local partner is from a collectivism (compared with individualism) country.
(Lu & Xu, 2006)	IJV Legitimacy	Institution	Firm	Japan	China	Chinese parent age, Chinese parent size, and IJV industry relatedness to either parent had a negative effect on IJV termination by enhancing an IJV's external legitimacy. IJV industry relatedness to both parents led to higher rates of IJV termination by weakening an IJV's internal legitimacy.
(Meschi et al., 2016)	Host-country Institutional environment	Institution and transaction cost	Firm	Multiple	Vietnam	An IJV with high transactional and low institutional alignments is less likely to terminate than an IJV with low transactional and high institutional alignments in the transition economy context.
(Sim & Ali, 2000)	Psychic distance	Conflict (institution)	Firm	Multiple	Bangladesh	Psychic distance between the host and home country positively affects the likelihood of ownership change in an IJV.

Prior studies also suggest that, except for formal institutions such as FDI regulations, foreign-invested firms also have to respond to host-country informal institutional pressures. Foreign-invested firms are under isomorphic pressures to imitate the organisational practices and structures adopted by others in the same organisational field (Meyer & Rowan, 1977). Such imitative behaviours are commonly defined as inter-organisational imitation and divided into three types: frequency-based, trait-based and outcome-based

(Haunschild & Miner, 1997). Frequency-based imitation relies on a firm's belief that structures and practices adopted by a large number of organisations gain strong legitimacy. Trait-based imitation refers to a firm's following behaviours and strategies of other successful firms. Outcome-based imitation suggests that a firm imitates decisions that generate positive outcomes to other firms and avoid those that generate negative outcomes. A firm regards other firms in the same industry as their models to imitate, because firm managers tend to consider firms within the same industry as more critical competitors than firms outside the industry (Haveman, 1993). This tendency is partially decided by the managers' cognitive categories (Porac & Thomas, 1990), and the cognitive category refers to "mental processes and resulting ideas, reinforced by culture and ideology, specifically norms, values, attitudes, and beliefs" (Uphoff, 2000). Foreign-invested firms are also subject to adverse rules and norms shaped by state ownership of host-country competitors in a transition economy context (Liao, 2015). State ownership refers to the holding of firm shares by governments. SOE domination in a region legitimises government surveillance on and interventions in local business, which is opposite to most foreign-invested firms' operational norms. SOEs also may build an old-fashioned network-based business environment, which is often unfamiliar to foreign-invested firms (Meyer & Nguyen, 2005).

Existing research also suggests that, apart from FDI regulations, host-country institutions may also put pressure on foreign-invested firms through other formal mechanisms. Foreign-invested firms' access to external resources is partly constrained by the local resource allocation institutions. We define resource allocation institutions as institutions which establish rules of the distribution of resources among firms. Foreign-invested firms commonly

have to rely on local resources such as land and infrastructure (Nguyen & Meyer, 2004). For small- and medium-sized firms, they may also partly depend on local finance in a foreign market, due to their liabilities of smallness (Laufs & Schwens, 2014). Also in some industries, foreign-invested firms' operations are restricted by host-country governments (Lu & Ma, 2008). Such restrictions normally set the maximum number and amount of investments that each foreign-invested firm can make.

These beliefs, which may or may not be evidenced by empirical findings, may shape host-country rules and norms related to foreign-invested firms and therefore the institutional pressures faced by them. We hence argue that, via these mechanisms, host-country institutions influence the institutional pressures imposed on the IJV mode and the WFOE mode, respectively. In particular, host-country institutions are likely to shape the legitimate status of the IJV mode relative to that of the WFOE mode through two informal mechanisms-inter-organisational imitation and state ownership. In industries where one ownership mode is more pervasive or successful the other, foreign-invested firms believe that this ownership mode is more legitimate and therefore works better than the other in the industry. In regions where SOEs dominate the local economy, those SOEs may build a business environment that is unfriendly to foreign-invested firms. Also, host-country institutions may affect the institutional pressures faced by IJVs relative to those faced by WFOEs via two formal mechanisms-resource allocation institutions and FDI regulations. In regions where government controls resource allocation, foreign-invested firms are under strong pressures to meet government expectations to access local resources. In industries where there is a limit on the number or amount of investments that each foreign-invested firm may

make, foreign-invested firms may find it difficult to thrive on their own. In these industries or regions, the institutional pressures faced by IJVs are likely to differ from those faced by WFOEs and hence an IJV's strategy to enhance their local legitimacy. Existing literature contributes to our understandings of how host-country formal institutions affect the CIW, but not of how host-country informal institutions influence the CIW, which is the first research gap that we intend to fill in this study. As for our understandings of how host-country formal institutions affect the CIW, prior studies focus on the influence of FDI regulations but ignore that of other mechanisms, which is the second research gap that we may fill in this study. The research model is summarised on the next page in Figure 8.

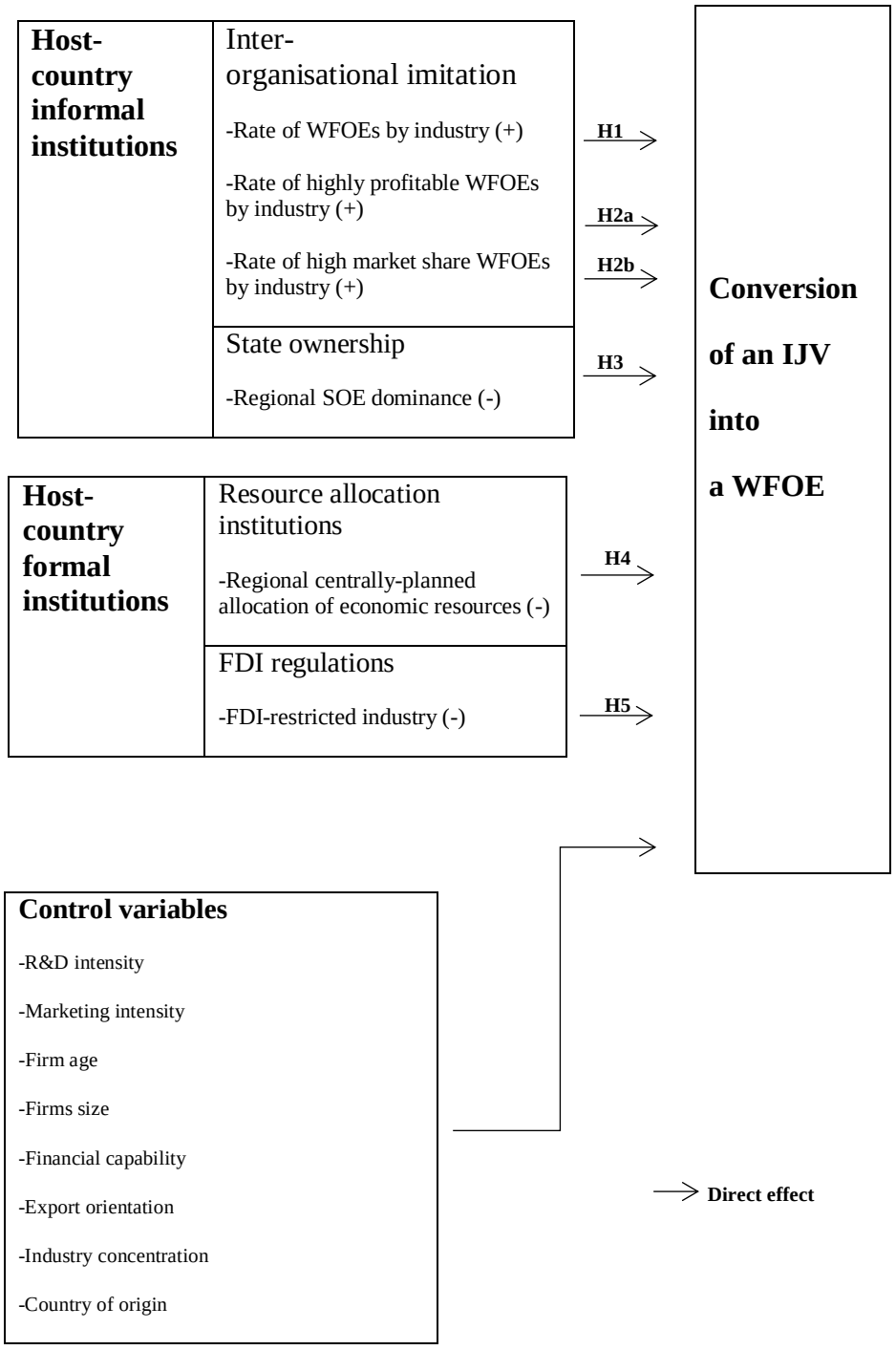

Figure 8 Research model of Chapter 4

4.4 Hypothesis development

The impact of host-country informal institutions

Informal institutions rely on cultural orthodoxy or social beliefs and norms (Xu & Shenkar, 2002). Host-country informal institutions may shape a foreign-invested firm's strategy (Peng et al., 2008). The mechanisms through

which host-country informal institutions influence a foreign-invested firm's strategy include managerial norms (Meyer, 2001), acceptability of bribery (Peng, 2003), antiforeigner attitudes (Cui et al., 2011), network-based business norms (Peng & Heath, 1996) and inter-organisational imitation (Lu, 2002). Informal institutions effect a change by defining the social acceptability of a foreign-invested firm or by shaping a foreign-invested firm's internal representation of the external environment (Lu & Xu, 2006; Xu & Shenkar, 2002).

Inter-organisational imitation

Frequency-based imitation is a standard and convenient response to external uncertainty (DiMaggio & Powell, 1983). Frequency-based imitation suggests that structures and practices that have been adopted by a large number of organisations gain strong legitimacy (Haunschild & Miner, 1997). Previous decisions or behaviours of other organisations can increase the legitimacy of similar decisions or behaviours (Tolbert & Zucker, 1983). As for a foreign-invested firm's ownership mode, we expect that the ownership mode adopted by more foreign-invested firms will gain stronger legitimacy among foreign-invested firms in an industry.

China's regulations on foreign investment have largely been uncertain. In the early years of FDI in China, the Chinese government put strict constraints on foreign investment and forced the establishment of IJVs (Teagarden, 1990). For those foreign-invested firms choosing to resist this institutional arrangement by adopting the WFOE mode, they were often sanctioned with more inspections and government interferences (Osland, Taylor, & Zou, 2001). Later on, with the 'Open Door' policies of the late 1970s and accession

to the World Trade Organisation in 2001, the Chinese government gradually released its constraints on foreign investment and the WFOE mode became permitted and encouraged (Deng, 2001). However, the reduction in regulations on foreign investment moves back-and-forth. For instance, introducing a cyber security law in 2017 has closed or obstructed most virtual private network services, which foreign-invested firms have often used to access "business-critical information from abroad" (Yang, 2017). Faced with such regulative uncertainty, we argue that foreign-invested firms may adopt frequency-based imitation as a standard response. In a foreign manager's cognitive category, a high rate of WFOEs (ROWs) in an industry implies that the CIW is a legitimate response to the host-country regulative uncertainty. Thus, we propose

- Hypothesis 1. *The rate of WFOEs* in an industry is positively associated with the likelihood of the conversion of an IJV into a WFOE in this industry.

Outcome-based imitation may be another mechanism through which host-country informal institutions affect a foreign-invested firm's ownership mode strategy (Lu, 2002). Outcome-based imitation suggests that firms may follow the successful practices of other organisations (Haunschild & Miner, 1997). As for a foreign-invested firm's ownership mode, we expect that the ownership mode adopted by successful foreign-invested firms in an industry will gain stronger legitimacy among foreign-invested firms in the industry (Cui et al., 2011). Existing studies suggest that two types of success are associated with a foreign-invested firm's ownership mode strategy: financial success (Nitsch, Beamish, & Makino, 1996; Pan & Chi, 1999; Pan, Li, &

David, 1999; Shrader, 2001; Simmonds, 1990; Woodcock, Beamish, & Makino, 1994), and non-financial success (Brouthers, Brouthers, & Werner, 1999; Brouthers et al., 2000). Financial success offers the insight of a manager's cognition on attaining the firm's economic purposes. Therefore, highly profitable firms can act as models for other firms in an industry (Burns & Wholey, 1993; Wholey & Burns, 1993). Non-financial success offers the insight of a manager's cognition on realizing the firm's strategic aims. China is a less-developed country, and "Market expansion is often the primary goal of FDI in less-developed countries" (Luo & Park, 2001). As a result, foreign-invested firms that achieve a large market share in an industry may act as models for other foreign-invested firms in the industry. In a foreign manager's cognitive category, a high rate of highly profitable or high market-share WFOEs in an industry implies that the CIW is a legitimate way of achieving success in the industry. Thus, we propose

- Hypothesis 2a. *The rate of highly profitable WFOEs (ROHPWs)* in an industry is positively associated with the likelihood of conversion of an IJV into a WFOE in the industry.
- Hypothesis 2b. *The rate of high market-share WFOEs (ROHMWs)* in an industry is positively associated with the likelihood of conversion of an IJV into a WFOE in the industry.

We assume that a firm will regard other firms in the same industry as their models to imitate, because institutional perspectives on strategy propose that a firm's mimetic strategies are decided partially by its managers' cognitive categories (Daft & Weick, 1984; Porac & Thomas, 1990). Managers build their cognitive categories by their internal interpretations of the environment

(Yiu & Makino, 2002). Managers consider firms within their cognitive categories as more critical competitors than firms outside their cognitive categories (Porac & Thomas, 1990). Therefore, managers will focus their attention on firm behaviours in their population rather than on firm behaviours in other populations (Hannan & Freeman, 1993). When building their cognitive categories, managers may pay less attention to or even ignore the firm behaviours in other industries (Haveman, 1993).

State ownership

Another important channel through which host-country informal institutions can affect a foreign-invested firm's ownership mode strategy is state ownership. In transition economies, SOEs are still key players and can affect the evolution of formal and informal institutions at the regional level (Meyer & Nguyen, 2005). A group of firms can shape local institutions by developing common understandings and practices in repeated interactions (Lawrence, Hardy, & Phillips, 2002). Those common understandings and practices include behaviour paradigms, ways of strategic thinking and collective sense-making (Porac & Rosa, 1996). Those common understandings and practices may shape the cognitive identities of local managers, which establish the boundaries of legitimation (Liao, 2015).

In China, government directions in economic activities shape part of the formal institutions, and government influences on managerial fashion and procedures shape part of the informal institutions (Ralston, Terpstra - Tong, Terpstra, Wang, & Egri, 2006). A key character of traditional Chinese SOEs is a lack of autonomy, and almost all their activities are subject to government approval (Lin et al., 1998). Where SOEs dominate the local economy,

government inspecting and interfering with local firms are more likely to be legitimised in this region. Compared to WFOEs, IJVs often suffer fewer government inspections and interference (Osland et al., 2001). In addition, SOEs in transition economies often adopt network-based growth strategies (Peng & Heath, 1996), and they control the access to old-fashioned business networks. Clusters of SOEs also build a business environment that favours the benefits of SOEs than foreign-invested firms. As a result, foreign-invested firms may experience difficulties in thriving all by themselves, where SOEs dominate the region (Meyer & Nguyen, 2005). For foreign-invested firms, one commonly adopted solution to such institutional pressure is to ally with local firms. The host-country IJV partner can help the foreign-invested firm establish legitimacy (Peng, 2003), and gain access to local business networks. For instance, the host-country IJV partner has a better understanding of the local informal rules and norms shaped by SOEs. The choice of the CIW is to expose a foreign-invested firm to adverse rules and norms shaped by local SOEs. Thus, we propose

- Hypothesis 3. *SOE dominance* in a region is negatively associated with the likelihood of conversion of an IJV into a WFOE in this region.

The impact of host-country formal institutions

Formal institutions depend on the setting, monitoring and enforcement of rules (Xu & Shenkar, 2002). Host countries often use formal institutions to shape a foreign-invested firm's strategy (Gatignon & Anderson, 1988; Gomes-Casseres, 1990). The mechanisms through which formal institutions affect a foreign-invested firm's strategy include ownership restriction, constraints on access to local resources, mandatory exporting, and

interference with other operational matters (Meyer et al., 2009). The purpose of using formal institutions to shape a foreign-invested firm's strategy is to maximise local interests from inward FDI or to protect national interests (Cui & Jiang, 2012).

Resource allocation institutions

Institutional theory suggests that external legitimacy increases a firm's chances of procuring external resources (Aldrich & Fiol, 1994; Hannan & Freeman, 1993; Meyer & Rowan, 1977; Meyer & Scott, 1994; Scott, 1995b; Zucker, 1987). In a transition economy, resource allocation institutions may determine whether a foreign-invested firm needs to gain external legitimacy for the purpose of acquiring local resources. In regions where the resource allocation institutions are more market-oriented, resource allocation is more determined by the market. If a subnational government's control on resource allocation is high (Xu, 2011), a foreign-invested firm's need to gain legitimacy from the subnational government for the purpose of acquiring external resources is high. In regions where resource allocation institutions are still largely centrally planned, the subnational governments maintain control of resource allocation (Rosser & Rosser, 2018). Therefore, a foreign-invested firm that gains legitimacy from subnational governments is better positioned in the subnational resource allocation system.

A common way for a foreign-invested firm to gain such legitimacy is to meet governmental expectations (Kostova & Roth, 2002). An important governmental expectation of emerging or transition countries is to nurture local firms via foreign investment (Buckley et al., 2007b). Compared to a WFOE, an IJV is more likely to provide local firms with access to foreign

technologies and management skills (Beamish, 2013; Blomström & Sjöholm, 1999). Empirical findings also suggest that IJVs are more likely to induce positive spillovers to local firms than WFOEs are (Gorodnichenko et al., 2014; Javorcik & Spatareanu, 2008; Tian, 2010). Therefore, an IJV is more likely to meet governmental expectations and therefore gains legitimacy from the subnational government.

Reforms from the centrally-planned- to market-oriented resource allocation institutions vary across regions in China (Fan & Wang, 2011). There are two major reasons for such cross-region variations: industrial structure and speed of ownership transformation. For instance, compared to inland provinces that are more dependent on heavy industry, coastal provinces are more dependent on light industry (Hao & Wei, 2010). In 1984, the Chinese government initiated the dual pricing system. This system allows the market to determine the prices of most small consumption commodities and light industrial products while maintaining centrally-planned allocation of resources (CAER) such as coal and steel, which are important for heavy industry (Wen, 2007; Wu & Chen, 2014). This offers the coastal area an earlier start on developing the product, factor, and intermediary markets and market-oriented legal systems. As a result, in a subnational region characterised by a high level of CAER, the subnational government's control on local resource allocation is still tight and therefore there is a need for a foreign-invested firm to adopt the IJV mode to gain legitimacy from the subnational government, for the purpose of being better positioned in the subnational resource allocation system. In this context, the choice of the CIW is to move a foreign-invested firm into a worse position in the subnational resource allocation system and managers of the firm are unlikely to do so. Thus, we propose

- Hypothesis 4. The degree of *centrally-planned allocation of economic resources* in a subnational region is negatively associated with the likelihood of the conversion of an IJV into a WFOE in this region.

FDI regulations A conventional mechanism through which host-country formal institutions affect a foreign-invested firm's ownership mode strategy is FDI regulations (Lu & Ma, 2008). The Chinese Ministry of Commerce and National Development and Reform Commission issued the first version of *Catalogue for the Guidance of Foreign Investment Industries* in 1995 and since then the catalogue has been revised every several years, classifying industries in which foreign investment is encouraged, restricted or prohibited. Those industries in which foreign investment is restricted are strategically important or politically sensitive or characterised by overcapacity or overinvestment (Reuters, 2017). Restrictions include the number and amount of investments that each foreign-invested firm can make, and limitations on the percentage of equity share that foreign-invested firms can hold in a firm. Foreign investments in non-restricted industries are not subject to those restrictions. Compared to foreign investment in non-restricted industries, foreign investment in restricted industries may face stronger local institutional pressures, because they either add to overcapacity or overinvestment or operate under close government scrutiny. For foreign investment of weak local legitimacy, Meyer et al. (2014) suggest that the IJV mode works better than the WFOE mode in coping with local institutional pressures. IJVs can enjoy legitimacy spillovers from local partners while WFOEs cannot (Yiu & Makino, 2002). Therefore, operating in an FDI-restricted industry, IJVs may face weaker regulative pressures than WFOEs. In this context, the choice of the CIW is to increase the regulative pressures

that a foreign-invested firm faces and decision makers of the firm are often unwilling to confront evitable institutional pressures. Here, FDI-restricted industries do not include WFOE-only industries, since the CIW will never happen in WFOE-only industries.

- Hypothesis 5. The conversion of an IJV into a WFOE is less likely to happen in an *FDI-restricted industry*.

4.5 Data and Methodology

Data and sample

Given our research question, panel secondary data is more reliable for analysis, since survey data may entail a high risk of recall bias (Hennart & Slangen, 2014). Panel data refers to "the pooling of observations on a cross-section of households, countries, firms, etc., over several time periods" (Baltagi, 2005). We have built a two-year panel data set of manufacturing IJVs in China. We have collected our data from the *Annual Report of Industrial Enterprise Statistics (ARIES)*, published by the *Chinese National Bureau of Statistics (NBS)*. It covers firm-level information of local and foreign-invested firms in mainland China with annual sales of at least five million RMB. Therefore, our empirical analyses may only explain the CIW behaviour of relatively large IJVs in China. Despite this limitation, this dataset has been previously used to study the conversion of an IJV's ownership mode in China such as Chang (2019) and provide reliable empirical insights. A manufacturing firm is defined as the one which operates in a 2-digit industry of which China's standard industrial classification (SIC) code varies between 13 and 43. An IJV is defined as a firm with over 0% but

less than 95% equity share held by foreign investors. A WFOE is defined as a firm with at least 95% equity share held by foreign investors.

Table 15 Variable measurements of Chapter 4

Variable	Description	Source
CIW	A dummy variable assigned a value of 1 if the IJV converts into a WFOE in year t, and 0 otherwise	e.g. (Puck et al., 2009); Source: ARIES
ROWs	The number of WFOEs divided by the number of foreign-invested firms in a 3-digit host-country industry in year t-1	e.g. (Lu, 2002); Source: ARIES
ROHPWs	The number of WFOEs divided by the number of foreign-invested firms, in the top quartiles for return on assets in a 3-digit host-country industry in year t-1	e.g. (Haveman, 1993); Source: ARIES
ROHMWs	The number of WFOEs divided by the number of foreign-invested firms, in the top quartiles for market share in a 3-digit host-country industry in year t-1	e.g. (Haveman, 1993); Source: ARIES
Regional SOE dominance	1-an index assessing the extent to which non-state-owned firms contribute to the total cumulative income of firms in a province in 2005 (2006)	e.g. (Meyer & Nguyen, 2005); Source: NERI indices
Regional CAER	1-an index assessing the extent to which economic resources of a province are allocated by market in year t-1	e.g. (Fan, Wang, & Zhang, 2001); Source: NERI indices
FDI-restricted industry	A dummy variable assigned a value of 1 if the IJV operates in an industry where foreign investment is restricted (except for ownership restriction) by the Chinese government in year t-1 and 0 otherwise, according to the Catalogue for the Guidance of Foreign Investment Industries (Amended in 2004)	e.g. (Chang, Kao, Kuo, & Chiu, 2012); Source: Catalogue for the Guidance of Foreign Investment Industries (Amended in 20004)
R&D intensity	R&D expenditure divided by total sales in year t-1	e.g. (Taylor et al., 1998); Source: ARIES
Marketing intensity	Marketing expenditure divided by total sales in year t-1	e.g. (Bradley & Gannon, 2000); Source: ARIES
Firm age	Logarithm of the difference between year t-1 and year of establishment	e.g. (Chang, Chung, & Moon, 2013); Source: ARIES
Firm size	Logarithm of the number of employees in year t-1	e.g. (Brouthers, 2002); Source: ARIES

Financial capability	Debt divided by equity in year t-1	e.g. (Lin, Cheng, & Liu, 2009); Source: ARIES
Export orientation	Export divided by total sales in year t-1	e.g. (Shi et al., 2001); Source: ARIES
Industry concentration	3-digit host-country industry Herfindahl-hirschman index in year t-1	e.g. (Rhoades, 1993); Source: ARIES
Country of origin	Whether or not the foreign investor is from non-HMT origin in year t-1	e.g. (Wang, Liu, Wei, & Wang, 2014a); Source: ARIES

Following Elango and Pattnaik (2007), we set a one-year lag for data to measure independent variables, to control for the potential endogeneity problem. We limit our observations between year 2005 and 2006, because the information on R&D and marketing expenditures, which is necessary to measure two of the important control variables, is only available between year 2005 and 2007 in ARIES, and a lag of one year is set to measure independent variables. Since ARIES is an archival dataset, there may be unusable or unreliable observations. We have carefully checked the dataset and excluded observations with inaccurate data, e.g., negative R&D expenditures and negative marketing expenditures. Due to data limitations, we can only specify foreign IJV partners from two countries of origin: Hong Kong, Macau or Taiwan (HMT) origin and non-HMT origin. Overseas Chinese share the Confucian culture and the Chinese language with local Chinese, which may help develop more mutual trust and less uncertainty between local partners and HMT partners than between local partners and non-HMT partners (Wei, Liu, & Liu, 2005), which consequently may cause the differences between HMT partners and non-HMT partners on ownership restructuring. We exclude any IJVs whose equity share is held by the Chinese government. We also exclude foreign-invested firms that operate in any industry where only the IJV mode is allowed. We exclude any observation whose IJV partner's

country of origin, industrial classification or geographical location changes over the sample period. The final usable sample includes an unbalanced panel of 16583 firms with 25958 firm-year observations. Operationalisation of variables is listed in Table 15.

4.6 Empirical results

Table 16 reports the descriptive statistics of our sample and the correlation matrix for the variables. We observe that (1) *ROWs* and *ROHPWs* are correlated at 0.89, (2) *ROWs* and *rate of ROHMWs* are correlated at 0.89, (3) *ROHPWs* and *ROHMWs* are correlated at 0.80, and (4) *regional SOE dominance* and *regional CAER* are correlated at 0.76. To cope with the potential multicollinearity problem, we do not include them in the same regression analysis but enter them separately in different models.

We employ panel logit regression (xtlogit in STATA) to estimate the model because the data is longitudinal panel data and the dependent variable is a binary variable. We adopt the random-effects model because it fits better than the fixed-effects model. In the fixed-effects model, the likelihood functions are not concave during the iterations of the maximum-likelihood algorithm, and no estimation result is generated. It suggests that the fixed-effects model does not fit and in this case the Hausman test is not workable, since the Hausman test is based on the comparison between the fixed-effects estimations and random-effects estimations (Benjamin, 1995). Table 17 reports the results with positive coefficients indicating a preference of the CIW and negative coefficients indicating a resistance to the CIW. Model 1 is the base model which includes only control variables. As for the *rates of WFOEs by industry*, *highly profitable WFOEs by industry* and *high market-*

share by industry, we introduce them one at a time in Models 2-4 and Models 5-7. As for *regional CAER* and *regional SOE dominance*, we also introduce them separately into Models 2-4 and Models 5-7. Models 2-7 also include control variables. The average VIF value of the variables in each model of Table 17 is smaller than 2.00, below the threshold value of 10.00 for concerns of multicollinearity (Chatterjee & Hadi, 2015).

Table 16 descriptive statistics and correlation matrix of Chapter 4

		N	Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11	12	13
1	ROWs	25981	0.59	0.11													
2	ROHPWs	2.981	0.59	0.12	0.89*												
3	ROHMWs	25981	0.56	0.14	0.89*	0.80*											
4	Regional SOE dominance	25981	-8.00	2.10	-0.16*	-0.13*	-0.13*										
5	Regional CAER	25981	-8.03	1.12	-0.07*	-0.06*	-0.07*	0.76*									
6	FDI-restricted industry	25981	0.07	0.25	-0.18*	-0.17*	-0.11*	-0.02*	-0.01*								
7	R&D intensity	25977	0.00	0.02	-0.02*	0.00	-0.01	0.04*	0.05*	-0.01							
8	Marketing intensity	25978	0.00	0.04	-0.03*	-0.03*	-0.02*	0.02*	0.01*	0.00	0.01						
9	Firm age	25977	1.92	0.68	0.02*	0.02*	0.03*	0.05*	0.09*	0.00	0.03*	0.02*					
10	Firm size	25980	5.09	1.08	0.05*	0.02*	0.03*	-0.06*	-0.05*	0.04*	0.02*	0.02*	0.17*				
11	Financial capability	25970	2.58	43.92	0.02*	0.01	0.02*	-0.01	-0.01	0.00	0.00	0.00	0.00	0.01*			
12	Export orientation	25981	0.38	0.42	0.21*	0.15*	0.21*	-0.17*	-0.11*	-0.08*	-0.05*	-0.03*	0.04*	0.15*	0.00		
13	Industry concentration	25981	0.01	0.01	-0.03*	0.02*	-0.06*	0.05*	0.04*	0.02*	0.06*	0.02*	0.02*	0.02*	0.00	-0.10*	
14	Country of origin	25981	0.56	0.50	-0.03*	-0.02*	-0.03*	0.15*	0.08*	-0.04*	0.01*	0.01	-0.07*	-0.03*	0.00	0.04*	0.01

*p<0.05

Table 17 Random effects panel logit regression of Chapter 4

Variables	CIW=1						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Host-country informal institutions							
ROWs		2.76***			2.66+		
		(0.63)			(1.38)		
ROHPWs			2.38**			2.50***	
			(0.78)			(0.50)	
ROHMWs				1.50			1.564***
				(0.96)			(0.43)
Regional SOE dominance		-0.053*	-0.05*	-0.05			
		(0.02)	(0.02)	(0.04)			
Host-country formal institutions							
Regional CAER					-0.04	-0.04	-0.04
					(0.04)	(0.04)	(0.04)
FDI-restricted industry		0.28	0.27	0.23	0.27	0.29	0.24
		(0.20)	(0.19)	(0.23)	(0.22)	(0.19)	(0.19)
Controls							
R&D intensity	-16.00*	-14.32*	-13.77+	-14.06	-13.86+	-14.34*	-14.51*
	(7.49)	(6.84)	(7.13)	(9.74)	(8.31)	(6.73)	(6.75)
Marketing intensity	-11.76*	-11.20*	-10.46+	-10.49	-10.73	-10.97*	-10.88*
	(5.86)	(5.33)	(5.69)	(8.23)	(7.02)	(5.14)	(5.09)
Firm age	-0.29***	-0.28***	-0.28***	-0.28**	-0.28***	-0.28***	-0.28***
	(0.07)	(0.06)	(0.07)	(0.10)	(0.08)	(0.06)	(0.06)
Firm size	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Financial capability	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Export orientation	0.01	-0.06	-0.04	-0.04	-0.03	-0.02	-0.02
	(0.12)	(0.11)	(0.10)	(0.11)	(0.11)	(0.11)	(0.11)
Industry concentration	6.06	6.28	5.32	6.14	5.99	5.51	6.32
	(4.61)	(4.09)	(4.10	(5.06)	(4.54)	(4.10)	(3.95)
Country of origin	-0.26**	-0.20*	-0.19*	-0.19	-0.21+	-0.22**	-0.222**
	(0.09)	(0.09)	(0.09)	(0.14)	(0.12)	(0.08)	(0.08)
Constant	-4.32***	-5.55***	-5.04**	-4.65	-5.13	-5.29***	-4.788***
	(0.31)	(0.44)	(1.62)	(3.37)	(2.76)	(0.48)	(0.46)
N	25958	25958	25958	25958	25958	25958	25958
Log likelihood	-6517.10	-6511.80	-6517.40	-6521.90	-6521.10	-6514.80	-6521.00
$\chi 2$	125.20***	135.70***	117.10***	115.50***	115.90***	130.30***	120.60***

Standard errors in parentheses. + if $p < 0.10$, * if $p < 0.05$, ** if $p < 0.01$, *** if $p < 0.001$. The host-country 2-digit industry dummies and year dummy are included.

In ownership mode analysis, there are two endogeneity (or self-selection) issues: the impact of establishment mode choice (greenfield or acquisition) on ownership mode choice (IJV or WFOE) at the time of foreign entry and the impact of ownership mode choice on post-entry performance. Regarding the first endogeneity issue, existing research suggests that foreign-invested firms may self-select their ownership modes to justify their establishment modes of foreign entry and some determinants of both mode choices may be

the same (Chen, 2008). In terms of the second endogeneity issue, existing studies also suggests that some determinants of both ownership mode choice and post-entry performance may be the same. As for this study, first, since the CIW is not an ownership strategy at the time of foreign entry but a post-entry ownership strategy, when the establishment mode of a firm is already established and not subject to any change, self-selecting ownership mode to justify establishment mode may be not a concern for a firm in the post-entry stage. Therefore, the first endogeneity issue is often considered not a concern, which is suggested by research on post-entry ownership change such as Yan and Zeng (1999) and Cuypers and Martin (2007). Second, since the relationship between ownership mode choice and post-entry performance is beyond this study, the second endogeneity issue is also not a concern in this study.

Hypothesis 1 states that an IJV operating in an industry characterised by a high rate of WFOEs is more likely to convert into a WFOE. The estimated coefficients for *ROWs* are positive and significant in Model 2 ($p<0.001$) and Model 5 ($p<0.10$) in Table 17, supporting Hypothesis 1. In the early years of FDI in China, the IJV mode of organisation was commonly required by the government (Beamish, 1993). Establishing a WFOE contradicted the expectation of the government, and the operation of a WFOE was expected to experience severe government pressures. Those government pressures include government inspections and interference in day-to-day operations (Osland et al., 2001). From the institutional view, it is expected that the IJV mode of organisation was legitimised during the early years of FDI in China. IJV managers may not convert their IJVs into WFOEs when explicit restrictions on foreign investment in the industry are removed, because

WFOEs are more likely to be treated unfavourably than IJVs in host countries with poor institutions such as China (Delios & Henisz, 2000; Henisz, 2000). However, more establishments of WFOE in the industry may send the information that the discrimination against WFOE lessens or disappears, and the WFOE mode of organisation becomes more legitimated. Since the management of IJV is often problematic, more IJVs may prefer to convert to WFOEs.

Hypothesis 2a predicts that the rate of highly profitable WFOEs in an industry is positively associated with the likelihood of the CIW. In Model 3 and Model 6 in Table 17, the estimated coefficients for *ROHPWs* are positive and significant in Model 3 ($p<0.01$) and Model 6 ($p<0.001$), supporting Hypothesis 2a. Hypothesis 2b states that rate of high-market share WFOEs in an industry is positively associated with the likelihood of the CIW. The coefficient estimation for the rate of high market-share WFOEs is positive and significant ($p<0.001$ in Model 7 in Table 17). Hypothesis 2b is supported. Our results suggest that IJVs imitate structures or practices that have produced positive outcomes for other foreign-invested firms and avoid those that have produced negative outcomes (Haunschild & Miner, 1997). High profit or high market share are often considered as positive outcomes, and therefore the ownership mode which has produced positive outcomes for other foreign-invested firms is expected to be imitated. In this context, the CIW is considered a legitimate way of achieving success in the industry. Hypothesis 3 states that an IJV in provinces characterised by *SOE dominance* is less likely to convert into a WFOE. The estimated coefficients for this variable are positive and significant ($p<0.05$ in Models 2-3 in Table 17), supporting Hypothesis 3. In China, SOEs operate under a centrally planned

system. The input and output of SOEs are not determined by the market but by government authorities (Lin et al., 1998). Governmental interferences on firms are more likely to be legitimised in regions dominated by SOEs, and adopting the IJV mode is an efficient way to reduce government interferences on foreign-invested firms (Osland et al., 2001). In addition, *regional SOE dominance* indicates that local rules and norms are significantly influenced by centrally planned (SOE) logic. Foreign-invested firms from market economies may find it difficult to understand and then follow those rules and norms, which the local equity partner is more capable of dealing with. In this context, the choice of the CIW is to expose a foreign-invested firm to adverse rules and norms shaped by local SOEs.

Hypothesis 4 predicts that an IJV in provinces characterised by a high degree of *regional CAER* is less likely to convert into a WFOE. In contrast to our expectation, the estimated coefficients for this variable are negative but insignificant ($p>0.10$) in Models 5-7 in Table 17. Hypothesis 4 is not supported. The coefficient is negative, which suggests that in regions where the local resource allocation institution is more centrally planned, foreign-invested firms have more need to adopt the IJV mode to gain legitimacy from the local government for the purpose of obtaining local resources. This is consistent with our arguments. However, this relationship is insignificant. One possible explanation for the insignificant relationship is that the local resource allocation institution has a considerably limited influence on a foreign-invested firm's resource acquisition. First, foreign-invested firms may rely on internal rather than local resources. Transition economies are characterised by uncertainty, and firms tend to rely on internal- rather than external resources when faced with uncertainty (Kobrin, 1982). Second,

foreign-invested firms' reliance on local resources may be limited. Foreign-invested firms may not rely on local resources such as financial capital and therefore are not subject to local institutions constraining the allocation of financial capital. In the robustness check, we rerun the regression using another NERI marketisation index to measure *centrally-planned allocation of bank loans*, and the insignificant result confirms this explanation.

Hypothesis 5 states that an IJV operating in an *FDI-restricted industry* is less likely to convert into a WFOE. In contrast to our expectation, the estimated coefficients for this variable are positive and insignificant ($p>0.10$) in Models 2-7 in Table 17. Hypothesis 5 is not supported. This interesting result is inconsistent with findings of Gatignon and Anderson (1988), Brouthers (2002), Morschett et al. (2008) and Delios and Beamish (1999). Our explanation for this surprising effect is based on an institutional view (Peng et al., 2008). One possible explanation is that foreign-invested firms operating in FDI-restricted industries may use alternative measures to leverage their local legitimacy. For instance, they may prefer to adjust their business practices rather than adopt the IJV mode to gain local legitimacy (Kostova & Roth, 2002). Foreign-invested firms may also use local management teams or keep in contact with host-country stakeholders such as media and unions (Liu & Woywode, 2013). They may also support local communities (Kostova & Zaheer, 1999).

Turning attention to the control variables, we can see that R&D intensive IJVs are less likely to convert into WFOEs. One possible explanation is that R&D intensive IJVs focus on technology creation in need of complementary knowledge controlled by local firms (Liu, Vahtera, Wang, Wang, & Wei,

2017), rather than technology transfer in need of avoiding technology dissemination by local equity partners (Brouthers, 2002). The *marketing intensity* variable is statistically significant with a negative sign, indicating that marketing intensive firms produce unsophisticated consumer goods and therefore are appropriate to adopt a low control mode such as the IJV mode (Anderson & Gatignon, 1986). *Firm age* is negative and statistically significant, revealing that older IJVs are more reluctant to ownership mode changes. *Country of origin* appears to be negative and significant. An IJV invested by HMT investors is more likely to convert into a WFOE, because culturally those investors are more proximal to China, which may help accelerate their speed of cross-border integration.

Robustness checks

First, we use alternative measures for our explanatory variables. Alternative measures for *rates of WFOEs by industry*, *rates of highly profitable WFOEs by industry* and *rates of high market-share WFOEs by industry*, are computed at the 4-digit SIC level rather than 3-digit SIC level. An alternative measure for *Regional CAER* is computed by 1- an index assessing the extent to which bank loans of a province are allocated by the market. The index is collected from the NERI indices (Fan et al., 2001). An alternative measure for *regional SOE dominance* is computed by cumulative annual sales of industrial SOEs divided by cumulative annual sales of industrial firms in a province. The sales data is collected from the ARIES dataset.

Table 18 Robustness check of Chapter 4– inter-organisational imitation variables computed at the 4-digit SIC level

Variables	CIW=1						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Host-country informal institutions							
ROWs		2.13*			2.28***		
		(1.01)			(0.44)		
ROHPWs			1.60***			1.56***	
			(0.33)			(0.42)	
ROHMWs				1.08*			1.15***
				(0.54)			(0.30)
Regional SOE dominance		-0.05+	-0.05*	-0.05+			
		(0.03)	(0.02)	(0.03)			
Host-country formal institutions							
Regional CAER					-0.04	-0.04	-0.04
					(0.04)	(0.04)	(0.04)
FDI-restricted industry		0.27	0.26	0.24	0.29	0.25	0.25
		(0.22)	(0.19)	(0.21)	(0.20)	(0.19)	(0.20)
Controls							
R&D intensity	-16.00*	-13.82+	-14.22*	-13.98+	-14.59*	-13.85*	-14.71*
	(7.49)	(7.98)	(6.77)	(8.19)	(6.88)	(6.85)	(6.87)
Marketing intensity	-11.76*	-10.13	-10.45*	-10.01	-10.81*	-10.05+	-10.63*
	(5.86)	(6.48)	(5.08)	(6.53)	(5.23)	(5.23)	(5.15)
Firm age	-0.29***	-0.27***	-0.28***	-0.27***	-0.28***	-0.28***	-0.28***
	(0.07)	(0.08)	(0.06)	(0.08)	(0.06)	(0.06)	(0.06)
Firm size	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Financial capability	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Export orientation	0.01	-0.05	-0.03	-0.04	-0.02	-0.01	-0.01
	(0.12)	(0.11)	(0.11)	(0.11)	(0.11)	(0.10)	(0.11)
Industry concentration	6.06	5.95	5.70	5.66	6.28	5.47	5.94
	(4.61)	(4.45)	(4.22)	(4.39)	(4.16)	(4.09)	(4.10)
Country of origin	-0.257**	-0.19+	-0.204*	-0.19+	-0.223**	-0.219*	-0.23**
	(0.09)	(0.11)	(0.08)	(0.11)	(0.09)	(0.09)	(0.09)
Constant	-4.32***	-4.95*	-4.92***	-4.44	-5.34***	-4.59***	-4.75***
	(0.31)	(2.43)	(0.36)	(2.29)	(0.48)	(1.17)	(0.45)
N	25958	25958	25958	25958	25958	25958	25958
Log likelihood	-6517.10	-6514.50	-6512.20	-6521.30	-6510.00	-6522.70	-6517.90
$\chi 2$	125.20***	123.80***	134.60***	115.50***	137.90***	86.50***	126.20***

Standard errors in parentheses. + if $p < 0.10$, * if $p < 0.05$, ** if $p < 0.01$, *** if $p < 0.001$. The host-country 2-digit industry dummies and year dummy are included.

Second, we use alternative models for regression. We employ the population-averaged model to run the regressions instead of the random effects model. Unlike the random effects model with individual-specific effects, the population-averaged model averages out any individual-specific effects (Cameron & Trivedi, 2013).

Table 19 Robustness check of Chapter 4– alternative measures for *regional CAER* and *regional SOE dominance*

Variables	CIW=1						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Host-country informal institutions							
Rate of WFOEs by industry		2.55**			3.21***		
		(0.80)			(0.75)		
Rate of highly profitable WFOEs by industry			2.42***			2.48	
			(0.50)			(30.75)	
Rate of high market-share WFOEs by industry				1.70***			1.59***
				(0.51)			(0.43)
Regional SOE dominance		-1.56**	-1.62***	-1.89**			
		(0.58)	(0.49)	(0.58)			
Host-country formal institutions							
Regional CAER					-0.01	-0.01	-0.01
					(0.03)	(0.14)	(0.02)
FDI-restricted industry		0.25	0.28	0.27	0.32	0.28	0.25
		(0.19)	(0.19)	(0.22)	(0.23)	(3.99)	(0.19)
Controls							
R&D intensity	-16.00*	-14.02*	-14.61*	-16.52*	-16.35*	-14.43	-14.84*
	(7.49)	(6.87)	(6.76)	(7.83)	(7.93)	(162.10)	(6.81)
Marketing intensity	-11.76*	-10.69*	-11.06*	-12.48*	-12.97*	-10.99	-11.12*
	(5.86)	(5.43)	(5.21)	(6.32)	(6.52)	(146.10)	(5.13)
Firm age	-0.29***	-0.28***	-0.29***	-0.30***	-0.31***	-0.29	-0.29***
	(0.07)	(0.06)	(0.06)	(0.07)	(0.07)	(1.79)	(0.06)
Firm size	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
	(0.04)	(0.04)	(0.04)	(0.05)	(0.05)	(0.04)	(0.04)
Financial capability	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Export orientation	0.01	-0.07	-0.05	-0.05	-0.01	0.00	-0.01
	(0.12)	(0.10)	(0.11)	(0.13)	(0.13)	(1.00)	(0.11)
Industry concentration	6.06	5.93	5.55	7.15	7.16	5.50	6.43
	(4.61)	(3.95)	(4.11)	(4.57)	(4.63)	(58.90)	(3.98)
Country of origin	-0.257**	-0.176*	-0.185*	-0.210*	-0.263**	-0.23	-0.24**
	(0.09)	(0.09)	(0.08)	(0.10)	(0.10)	(2.83)	(0.08)
Constant	-4.32***	-4.35***	-4.56***	-5.00***	-6.11***	-4.72	-4.37***
	(0.31)	(1.15)	(0.38)	(0.42)	(0.55)	(72.70)	(0.41)
N	25958	25958	25958	25958	25958	25958	25958
Log likelihood	-6517.10	-6519.10	-6510.10	-6494.50	-6492.70	-6517.20	-6521.50
$\chi 2$	125.20***	99.64***	136.50***	164.40***	167.00***	125.20***	119.90***

Standard errors in parentheses. + if $p < 0.10$, * if $p < 0.05$, ** if $p < 0.01$, *** if $p < 0.001$. The host-country 2-digit industry dummies and year dummy are included.

We also use the panel Probit model to run the regressions instead of the panel Logit model. Probit regression is also commonly used in management research to estimate the model when the data is cross-sectional and the dependent variable is dichotomous. The main difference between Logit regression and Probit regression is the distribution function. The results of the population-averaged model and the panel Probit model are also consistent with our main results. We also use the pooled Logit model to run the

regression for robustness check. We find consistent results with those alternative measures in Tables 18-22.

Table 20 Robustness check of Chapter 4- population-averaged panel Logit regression

Variables	CIW=1						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Host-country informal institutions							
ROWs		1.63***			1.65***		
		(0.37)			(0.37)		
ROHPWs			1.54***			1.56***	
			(0.31)			(0.31)	
ROHMWs				0.96***			0.98***
				(0.26)			(0.26)
Regional SOE dominance		-0.03*	-0.03*	-0.03*			
		(0.01	(0.01)	(0.01)			
Host-country formal institutions							
Regional CAER					-0.03	-0.03	-0.03
					(0.02)	(0.02)	(0.02)
FDI-restricted industry		0.16	0.17	0.14	0.16	0.17	0.15
		(0.11)	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)
Controls							
R&D intensity	-11.12*	-10.63*	-10.70*	-10.79*	-10.71*	-10.78*	-10.87*
	(4.99)	(4.97)	(4.96)	(5.00)	(4.95)	(4.94)	(4.98)
Marketing intensity	-6.61*	-6.76*	-6.73*	-6.63*	-6.81*	-6.78*	-6.69*
	(3.01)	(3.06)	(3.07)	(3.04)	(3.04)	(3.05)	(3.03)
Firm age	-0.22***	-0.21***	-0.21***	-0.21***	-0.21***	-0.22***	-0.21***
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Firm size	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Financial capability	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Export orientation	-0.02	-0.05	-0.05	-0.05	-0.04	-0.03	-0.03
	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)
Industry concentration	3.63	3.64+	3.41	3.73+	3.65+	3.42	3.75+
	(2.39)	(2.21)	(2.33)	(2.19)	(2.20	(2.33)	(2.19)
Country of origin	-0.15**	-0.12*	-0.12*	-0.12*	-0.14**	-0.14**	-0.14**
	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Constant	-1.90***	-2.90***	-2.89***	-2.59***	-2.91***	-2.90***	-2.59***
	(0.17)	(0.26)	(0.24)	(0.23)	(0.31)	(0.29)	(0.28)
N	25958	25958	25958	25958	25958	25958	25958
χ^2	112.20	141.50	143.60	136.60	136.10	138.30	130.90

Standard errors in parentheses. + if $p < 0.10$, * if $p < 0.05$, ** if $p < 0.01$, *** if $p < 0.001$. The host-country 2-digit industry dummies and year dummy are included.

Table 21 Robustness check of Chapter 4- panel Probit regression

Variables	CIW=1						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Host-country informal institutions							
ROWs		1.69***			1.71***		
		(0.37)			(0.37)		
ROHPWs			1.51***			1.60***	
			(0.30)			(0.31)	
ROHMWs				1.03***			0.96***
				(0.29)			(0.26)
Regional SOE dominance		-0.03**	-0.03**	-0.04**			
		(0.01)	(0.01)	(0.01)			
Host-country formal institutions							
Regional CAER					-0.03	-0.03	-0.03
					(0.02)	(0.02)	(0.02)
FDI-restricted industry		0.17	0.18	0.17	0.17	0.19	0.15
		(0.12)	(0.11)	(0.13)	(0.12)	(0.12)	(0.11)
Controls							
R&D intensity	-8.75*	-8.33*	-8.35*	-9.23*	-8.37*	-8.76*	-8.47*
	(3.88)	(3.84)	(3.83)	(4.20)	(3.83)	(3.99)	(3.81)
Marketing intensity	-6.52*	-6.67*	-6.57*	-7.12*	-6.71*	-6.90*	-6.55*
	(3.11)	(3.15)	(3.12)	(3.46)	(3.12)	(3.26)	(3.05)
Firm age	-0.17***	-0.17***	-0.17***	-0.17***	-0.17***	-0.17***	-0.17***
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Firm size	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
	(0.02)	(0.02)	(0.02)	(0.03)	(0.02)	(0.02)	(0.02)
Financial capability	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Export orientation	0.01	-0.03	-0.02	-0.02	-0.01	0.00	-0.01
	(0.06)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.06)
Industry concentration	3.44	3.79	3.35	4.20	3.79	3.48	3.84
	(2.58)	(2.48)	(2.53)	(2.70)	(2.47)	(2.64)	(2.42)
Country of origin	-0.15**	-0.12*	-0.12*	-0.14*	-0.14**	-0.14**	-0.14**
	(0.05)	(0.05)	(0.05)	(0.06)	(0.05)	(0.05)	(0.05)
Constant	-2.35***	-3.40***	-3.32***	-3.38***	-3.36***	-3.47***	-2.97***
	(0.17)	(0.26)	(0.24)	(0.25)	(0.31)	(0.30)	(0.28)
N	25958	25958	25958	25958	25958	25958	25958
Log likelihood	-6533.20	-6518.20	-6516.10	-6517.00	-6520.90	-6516.70	-6525.40
$\chi 2$	91.37	106.00	104.70	143.00	100.70	125.80	88.18

Standard errors in parentheses. + if $p < 0.10$, * if $p < 0.05$, ** if $p < 0.01$, *** if $p < 0.001$. The host-country 2-digit industry dummies and year dummy are included.

Table 22 Robustness check of Chapter 4- pooled Logit regression

Variables	CIW=1						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Host-country informal institutions							
ROWs		1.62***			1.65***		
		(0.37)			(0.37)		
ROHPWs			1.53***			1.55***	
			(0.31)			(0.31)	
ROHMWs				0.96***			0.98***
				(0.26)			(0.26)
Regional SOE dominance		-0.03*	-0.03*	-0.03*			
		(0.01)	(0.01)	(0.01)			
Host-country formal institutions							
Regional CAER					-0.03	-0.03	-0.03
					(0.02)	(0.02)	(0.02)
FDI-restricted industry		0.16	0.17	0.14	0.16	0.17	0.15
		(0.11)	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)
Controls							
R&D intensity	-11.15*	-10.66*	-10.74*	-10.82*	-10.74*	-10.81*	-10.90*
	(5.01)	(4.99)	(4.99)	(5.03)	(4.97)	(4.96)	(5.00)
Marketing intensity	-6.61*	-6.76*	-6.73*	-6.63*	-6.81*	-6.78*	-6.69*
	(3.01)	(3.05)	(3.06)	(3.04)	(3.04)	(3.05)	(3.02)
Firm age	-0.22***	-0.21***	-0.21***	-0.21***	-0.22***	-0.22***	-0.22***
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Firm size	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Financial capability	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Export orientation	-0.02	-0.05	-0.05	-0.05	-0.04	-0.03	-0.03
	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)
Industry concentration	3.62	3.63+	3.41	3.73+	3.64+	3.42	3.74+
	(2.39)	(2.21)	(2.33)	(2.19)	(2.20)	(2.33)	(2.18)
Country of origin	-0.15**	-0.12*	-0.12*	-0.12*	-0.14**	-0.14**	-0.14**
	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Constant	-1.90***	-2.90***	-2.89***	-2.59***	-2.91***	-2.90***	-2.59***
	(0.17)	(0.26)	(0.24)	(0.23)	(0.31)	(0.29)	(0.28)
N	25958	25958	25958	25958	25958	25958	25958
Log likelihood	-6567.90	-6553.60	-6551.00	-6556.70	-6555.80	-6553.10	-6559.00
$\chi 2$	113.10	142.20	144.20	137.40	136.80	138.90	131.70

Standard errors in parentheses. + if $p < 0.10$, * if $p < 0.05$, ** if $p < 0.01$, *** if $p < 0.001$. The host-country 2-digit industry dummies and year dummy are included.

4.7 Discussions and conclusions

Our study is motivated by the desire to better understand how institutions may affect an IJV's CIW strategy in a transition economy context. It contributes to the literature by explicitly investigating the host-country institutional determinants of the CIW. As noted earlier, prior research has explored the impact of host-country formal institutions, specifically FDI regulations, on the CIW. While several studies have acknowledged that host-country

informal institution is a relevant dimension in shaping a foreign-invested firm's ownership strategy (Davis, Desai, & Francis, 2000; Yiu & Makino, 2002), ours is the first one that has directly examined the role of host-country informal institutions in CIW research.

We drew upon the institutional view (North, 1990; Peng et al., 2008; Scott, 1995a) to examine how host-country institutions affect an IJV's CIW strategy. Using a comprehensive panel dataset of manufacturing IJVs in China in 2005-2006, we find that the rates of WFOEs, highly profitable WFOEs and high market share WFOEs in an industry have a positive relationship with the likelihood of the CIW in the industry. This finding further emphasises a foreign-invested firm's reliance on inter-organisational imitation in their ownership strategy (Lu, 2002). We also find that SOE dominance in a region is negatively related to the CIW in the region. This result suggests that a region dominated by SOEs often turns out unfriendly to foreign-invested firms (Liao, 2015). However, we found no significant impact of the regional resource allocation institution on the CIW in the region. One possible explanation is that in a transition economy context foreign-invested firms may rely more on their internal resources than local resources (Kobrin, 1982), or that foreign-invested firms' reliance on local resources is limited. We also find no significant difference between the likelihood of the CIW in FDI-restricted industries and that in non-restricted industries. One potential explanation is that in FDI-restricted industries foreign-invested firms prefer to use alternative measures such as supporting local communities (Kostova & Zaheer, 1999) rather than using the IJV mode to leverage their local legitimacy. These findings are consistent with our arguments that host-country institutions may affect the CIW through not only formal mechanisms

but also informal mechanisms. Our results also indicate that there may be a limit on the extent to which host-country formal institutions influence the CIW, because adopting the IJV mode is sometimes an unfavourable strategy for foreign-invested firms to respond to formal institutional pressures.

Our focus on the role of host-country institutions in CIW research differs from yet complements some existing understanding in this field. Deng (2001) focuses on the impact of host-country formal institutions and finds that many IJVs converted into WFOEs when the host government reduces FDI regulations. Deng's (2001) study advanced the literature by examining how host-country institutions affect the CIW through formal mechanisms. Our findings suggest that, by taking into account informal mechanisms, new insight has been provided on how host-country institutions influence the CIW. Our theoretical approach adds a new crucial dimension to institution-based CIW study and may stimulate future research in this direction.

Our concentration on the role of host-country formal institutions in CIW study also differs from but complements prior research in this area. Aware of the status of FDI regulations as formal constraints on the CIW, existing studies have examined how the complexity of FDI regulations can influence the CIW and found a significant relationship between them (Puck et al., 2009). FDI regulations can also put pressure on foreign-invested firms via other mechanisms such as FDI-restricted industry (Lu & Ma, 2008), although our findings suggest that the likelihood of the CIW is not significantly different between FDI-restricted industries and non-restricted industries. Host-country institutions may also constrain foreign-invested firms through other formal mechanisms such as resource allocation institutions, although we find no

significant relationship between the regional CAER and the likelihood of the CIW in the region. Despite those insignificant findings, our research together with other research in this field, illustrates that taking into account both formal mechanisms and informal mechanisms, is in need to expand our understanding of how host-country institutions influence an IJV's CIW strategy.

There are limitations to our study, which may have implications for future research. First, the foreign-invested firms in our sample are relatively large firms. We include only foreign-invested firms with annual sales of at least five million RMB in our sample because smaller foreign-invested firms are not available in ARIES. As institutional impacts may differ among firms of different size (Beck, Demirgüç - Kunt, & Maksimovic, 2005), future research may test whether our results are consistent for small and medium-sized foreign-invested firms. Second, our use of archival data is incapable of capturing perceptions of managers of the pivotal variables such as institutional pressures on their ownership mode decision making (Meyer *et al.*, 2014). Future research may employ survey instruments to complement our documentary data. Third, future research could further observe the mechanisms underpinning why and how *regional CAER* may not be related to the CIW in the region. Could it result from foreign-invested firms' choice to reliance on internal resources in response to the uncertainty in transition economies (Kobrin, 1982)? Fourth, future research could also observe the mechanisms underpinning why and how the likelihood of the CIW is not different between FDI-restricted industries and non-restricted industries. It may also be interesting to address when foreign-invested firms use the IJV mode and when foreign-invested firms use alternative measures to cope with

host-country regulative pressures. Fifth, we do not have information about the establishment mode (greenfield or acquisition) of foreign-invested firms. Foreign-invested firms may self-select their ownership modes (IJV or WFOE) to justify their establishment modes (greenfield or acquisition) at the time of foreign entry (Chen, 2008), and future research may explore whether the establishment mode of a foreign-invested firm may also influence its CIW strategy. Fifth, another limitation is that we also do not have detailed information about the autonomy status of foreign-invested firms. As a result, we could not assess whether a foreign-invested firm has to challenge host-country institutions to better serve its parent firm's global strategy. Future research may adopt an institutional duality view on this question (Kostova & Roth, 2002). Sixth, our attention has only been paid to a few mechanisms through which host-country institutions may affect the CIW. Future research may complement this study by exploring other mechanisms through which host-country institutions may influence the CIW. Last but not least, this study is limited to host-country institutional explanations of the CIW. Future research may pay more attention to the impact of home-country institutions and cross-national institutional distance on the CIW, thus forming a more fine-grained institutional view of the CIW.

This study also provides valuable managerial and policy implications. For IJV managers, we show them how to respond to the uncertain regulative environment in the host country. Our findings confirm that a common strategy used by IJVs is to imitate the ownership mode adopted by many foreign-invested firms within an industry. The underlying rationale is that structures and practices adopted by many foreign-invested firms become more socially or culturally accepted (Lu, 2002), and such social or cultural acceptability is

vital for a firm's survival and prosperity (North, 1990). For host-country policymakers, they may be most interested in our findings in IJVs' behavioural patterns. Subnational SOE dominance may render local informal institutions unfriendly for foreign-invested firms to operate on their own (Liao, 2015). Our findings confirm that an IJV is reluctant to convert into a WFOE in host-country subnational regions dominated by SOEs. SOE dominance may drive foreign-invested firms, which are unwilling to adopt the IJV mode, out of the region. A foreign-invested firm may be unwilling to adopt the IJV mode because it is unwilling to share its output with the local partner or to be exposed to management problems associated with the IJV mode (Hennart, 1991a; Yan & Zeng, 1999). Therefore, for a subnational region attempting to attract more foreign direct investment, the subnational government is suggested to reduce the influence of local SOEs.

In conclusion, this chapter reveals (1) two informal mechanisms - rate of WFOEs/successful WFOEs in a host industry and host-regional SOE dominance - through which host-country institutions may constrain the CIW and (2) two formal mechanisms - host-regional CAER and FDI-restricted industry - through which host-country institutions may not constrain the CIW. Our findings enrich our knowledge of inter-organisational imitation, state ownership, resource allocation institutions, and FDI regulations as four sets of institutional constraints on firm behaviours across IJV life-cycle stages and should encourage further study on those interesting and promising topics.

Chapter 5: Conclusions

5.1 A holistic description of research

Research on firm behaviours across international joint venture (IJV) life-cycle stages has become an important issue in international business study with the massive growth in the formation of IJVs over the past three decades (Steensma et al., 2008). Host-country institutional constraints are widely considered to have a substantial impact on those firm behaviours (Brouthers & Hennart, 2007; Farole & Winkler, 2012; Puck et al., 2009), because they define legitimate firm behaviours and thus affect firm performance (Scott, 1995a). Despite the importance of institutional mechanisms in defining legitimacy, existing research on the mechanisms through which host-country institutions constrain firm behaviours across IJV life-cycle stages is still incomplete. This thesis has revealed several new mechanisms through which host-country institutions may constrain firm behaviours at different IJV life-cycle stages.

First, this thesis has explored the mechanisms through which host-country institutions constrain firm behaviours at the stage of IJV formation. Specifically, this thesis has explored whether host-country institutions constrain the foreign direct investment (FDI) ownership mode choice (OMC) of an IJV through the host-country national cultural dimension of indulgence-restraint (IR). By integrating institutional theory and transaction cost economics (TCE) (Roberts & Greenwood, 1997), we have developed the following two mechanisms: (a) by determining the effects of opportunism on TCE's predictions of FDI OMC, the host-country national cultural dimension of IR moderates the relationships between transaction-cost attributes of an

FDI project and the FDI OMC of an IJV. IR reflects a society's belief that to what extent the gratification of human desires has to be restrained and ruled by stringent social norms and values such as moral disciplines (Hofstede et al., 2010), while opportunism is widely treated as an immoral or guileful behaviour (Matthews, 1990). Low level of national indulgence is associated with severe social sanctions for enforcing moral disciplines, which can drive up the costs of opportunistic behaviours. Therefore, opportunism is more likely to happen in indulgent countries than in restraint countries. Firstly, a parent firm's R&D intensity reflects the extent to which the firm's transaction-specific investment in an FDI project is subject to its potential IJV partner's exploitation and exploitation is an opportunistic behaviour (Brouthers, 2002). Such exploitation is more likely to happen in indulgent host countries than in restraint host countries and therefore a parent firm with high R&D intensity are less likely to choose the FDI OMC of an IJV in indulgent host countries than in restraint host countries. Therefore, host-country indulgence will enhance the TCE-predicted negative relationship between a parent firm's R&D intensity and the FDI OMC of an IJV. Secondly, a parent firm's international experience reflects the firm's ability to ascertain the extent to which its employees have carried out contractual obligations or performed under pre-specified agreements (Anderson & Gatignon, 1986). Local employees' opportunism can cause their deviations from contractual obligations or pre-specified agreements and therefore inexperienced MNEs are more in need of a host-country IJV partner familiar with monitoring local employees in indulgent host countries than in restraint host countries. Therefore, host-country indulgence will enhance the TCE-predicted negative relationship between a parent firm's international experience and the FDI

OMC of an IJV. (b) By determining the effects of bounded rationality on TCE's predictions of FDI OMC, the host-country national cultural dimension of IR moderates the relationships between transaction-cost attributes of an FDI project and the FDI OMC of an IJV. Firstly, IR reflects a society's belief that to what extent the gratification of human desires has to be restrained and ruled by stringent social norms and values such as thrift (Hofstede et al., 2010), while thrift is often considered a valuable trait in a restraint culture (Akdeniz & Talay, 2013). Low level of national indulgence is associated with social praises of hard working in fulfilling contractual obligations or pre-specified agreements. Therefore, local employees' deviations from contractual obligations or pre-specified agreements are more likely to happen in indulgent countries than in restraint countries, and therefore bounded rationality makes it more difficult for inexperienced MNEs to monitor their local employees on their own in indulgent host countries. Therefore, host-country indulgence will enhance the TCE-predicted negative relationship between a parent firm's international experience and the FDI OMC of an IJV. Secondly, IR reflects a society's belief that to what extent the gratification of human desires has to be restrained and ruled by stringent social norms and values such as maintaining order in the nation (Hofstede et al., 2010). Host-country political risk reflects the "risk or probability of occurrence of some political events that will change the prospects" of an investment (Haendel et al., 1975). Low level of national indulgence is associated with giving high priority to maintaining order in the nation and restraint countries tend to spend more efforts on maintaining political order than indulgent countries. Therefore, political risk is more likely to run out of control in indulgent countries than in restraint countries, and therefore bounded rationality makes it more

difficult for an MNE to cope with the more unpredictable political risk in indulgent host countries on their own. Therefore, host-country indulgence will enhance the TCE-predicted positive relationship between host-country political risk and the FDI OMC of an IJV. In addition, on one hand, since the host-country IJV partner's opportunism is more likely to happen in indulgent host countries than in restraint host countries, an MNE should avoid the FDI OMC of an IJV in indulgent host countries. On the other hand, since host-country employees' deviations from their contractual obligations are more likely to happen and political risk is more likely to run out of control in indulgent host countries than in restraint host countries, an MNE should cooperate with a host-country IJV partner in indulgent host countries. The direct effect of the host-country national cultural dimension of IR on the FDI OMC of an IJV is opposing.

To search for empirical evidence of the above arguments, we have collected cross-sectional data from 431 outward FDI projects conducted by Chinese manufacturing firms between 2006 and 2008. By analysing the data with Logit regressions, we have found that the relationships between transaction-cost attributes of an FDI project (a parent firm's R&D intensity, a parent firm's host-country experience and host-country political risk) and the FDI OMC of an IJV are stronger in indulgent host countries than in restraint host countries. We have also found no significant direct relationship between the host-country national cultural dimension of IR and the FDI OMC of an IJV. Therefore, at the stage of IJV formation, we have confirmed that host-country institutions constrain the FDI OMC of an IJV through the host-country national cultural dimension of IR.

Second, this thesis has explored new mechanisms through which host-country institutions constrain firm behaviours at the stage of IJV operation. To be specific, this thesis has explored whether host-country institutions constrain intra-industry productivity spillovers from IJVs to domestic firms through state ownership of the host-country IJV partner. By integrating technology gap and absorptive capacity into an institutional framework, we develop the following four mechanisms: (a) state ownership of the host-country IJV partner affects the technology gap between IJVs and domestic firms. Hong Kong, Macau or Taiwan (HMT) firms prefer non-state-owned host-country partners while non-HMT firms prefer state-owned host-country partners when investing in mainland China (Huang Jr, 2004). State-owned enterprises (SOEs) tend to be more technologically advanced than non-SOEs, while non-HMT firms tend to be more technologically advanced than HMT firms (Wang et al., 2009). Therefore, IJVs with state-owned host-country IJV partners (SIJVs) tend to be more technologically advanced than IJVs with privately owned host-country partners (PIJVs) and therefore the technology gap between SIJVs and domestic firms should be greater than that between PIJVs and domestic firms. (b) State ownership of a domestic firm affects the technology gap between IJVs and the domestic firm. According to what we have discussed above in mechanism (a), SOEs tend to be more technologically advanced than non-SOEs in China and therefore the technology gap between SOEs and SIJVs (PIJVs) should be smaller than that between POEs and SIJVs (PIJVs). (c) State ownership of the host-country IJV partner affects the absorptive capacity of domestic firms to learn from IJVs. SOEs often bear government policy burdens on improving domestic firms' productivity (Buckley et al., 2007b; Lin et al., 1998) while POEs do

not. State ownership of the host-country IJV partner can bring such policy burdens to an SIJV and therefore SIJVs are more likely to help domestic firms improve their productivity than PIJVs. Domestic firms' capacity to learn from SIJVs is stronger than to learn from PIJVs. (d) State ownership of a domestic firm affects its absorptive capacity to learn from IJVs. As we have discussed before in mechanism (a), SOEs tend to be more technologically advanced than non-SOEs in China. This may contribute to SOEs' advantages over POEs in absorbing productivity spillovers (Liu et al., 2009). However, SOEs' incentives to learn is weaker than non-SOEs due to policy burdens or soft budget constraints (Buckley et al., 2002). This may contribute to SOEs' disadvantages over POEs in absorbing productivity spillovers (Xiao & Park, 2017). Based on the assumptions that technology gap determines the potential for domestic firms to learn from IJVs and absorptive capacity determines the extent to which domestic firms can take advantage of this potential (Perri & Peruffo, 2016), we argue that state ownership of the host-country IJV partner enhances intra-industry productivity spillovers from IJVs to domestic firms and that state ownership of a domestic firm enhances intra-industry productivity spillovers from SIJVs to the domestic firm, while the impact of state ownership of a domestic firm on intra-industry productivity spillovers from PIJVs to domestic firms is insignificant.

To find empirical support of the above arguments, we have collected panel data from 256396 domestic firms and 68381 foreign-invested firms in Chinese manufacturing industry between 1998 and 2007. By analysing the data with panel OLS regressions, we have found that (1) SIJVs generate a greater magnitude of intra-industry productivity spillovers to domestic firms than PIJVs and that (2) SIJVs generate a greater magnitude of intra-industry

productivity spillovers to SOEs than to POEs. We also find very limited intra-industry productivity spillovers from PIJVs to both SOEs and POEs. Therefore, at the stage of IJV operation, we have confirmed that host-country institutions constrain intra-industry productivity spillovers from IJVs to domestic firms through state ownership of the host-country IJV partner.

Third, this thesis has explored new mechanisms through which host-country institutions constrain firm behaviours at the stage of IJV termination. Specifically, this thesis has explored whether through two informal mechanisms - rate of wholly foreign-owned enterprises (WFOEs)/successful WFOEs in a host industry and host-regional SOE dominance - and two formal mechanisms - host-regional centrally-planned allocation of economic resources (CAER) and FDI-restricted industry (excluding WFOE-only industries) - host-country institutions constrain the conversion of an IJV into a WFOE (CIW). Based on the assumption that host-country institutions will affect the legitimate status of an IJV relative to that of a WFOE, we develop the following four mechanisms: (a) rates of WFOEs/successful WFOEs in a host industry affect the legitimate status of an IJV relative to that of a WFOE. A high rate of WFOEs suggests that the WFOE mode of organisation is adopted by a large number of other firms. Frequency-based imitation suggests that firms are under isomorphic pressures to imitate structures and practices adopted by a large number of other firms (Haunschild & Miner, 1997). Therefore, faced with a high rate of WFOEs in a host industry, an IJV is under strong isomorphic pressures to adopt the WFOE mode of organisation and therefore the CIW is more likely to happen. A high rate of successful WFOEs suggests that the WFOE mode of organisation tend to generate positive outcomes to other firms. Outcome-based imitation suggests that firms are

under isomorphic pressures to imitate decisions that generate positive outcomes to other firms and avoid those that generate negative outcomes (Haveman, 1993). Therefore, faced with a high rate of successful WFOEs in a host industry, an IJV is under strong isomorphic pressures to adopt the WFOE mode of organisation and therefore the CIW is more likely to happen. (b) Host-regional SOE dominance affects the legitimate status of an IJV relative to that of a WFOE. SOE dominance in a host region tends to legitimise governments' inspecting and interfering with local firms, because SOEs are used to such government behaviours (Lin et al., 1998). SOE dominance in a host region can also limit foreign investors' access to local business networks, because in transition economies SOEs often adopt network-based growth strategies (Peng & Heath, 1996) and control the access to old-fashioned business networks (Meyer & Nguyen, 2005). As a result, host-regional SOE dominance will create a business environment unfriendly for foreign investors to survive and succeed on their own (Liao, 2015). The CIW is less likely to happen in such a host region. (c) Host-regional CAER affects the legitimate status of an IJV relative to that of a WFOE. Host-regional CAER determines the extent to which regional governments control a firm's access to local economic resources (Fan & Wang, 2011). From a government's perspective, the IJV mode of organisation may be more legitimate than the WFOE mode, since an IJV is more likely to provide domestic firms with access to foreign technologies and management skills than a WFOE (Beamish, 2013; Blomström & Sjöholm, 1999). Because governments control both definition of the legitimate FDI ownership mode and allocation of local economic resources, an IJV is better positioned in the regional resource allocation systems than a WFOE. Therefore, the level of

host-regional CAER negatively affects the CIW. (d) FDI-restricted industry affects the legitimate status of an IJV relative to that of a WFOE. An FDI-restricted industry is strategically important or politically sensitive or characterised by overcapacity or overinvestment (Reuters, 2017). Foreign investors are faced with huge regulative pressures operating in an FDI-restricted industry, and maintaining an IJV partnership with domestic firms can effectively reduce such regulative pressures (Meyer et al., 2014). Therefore, the CIW is less likely to happen in an FDI-restricted industry than in a non-restricted industry.

To obtain empirical evidence of the above arguments, we have collected panel data from 16583 manufacturing IJVs in China between 2005 and 2006. By analysing the data with panel Logit regressions, we have found (1) positive relationships between rates of WFOEs/highly profitable WFOEs/high market-share WFOEs in a host industry and the CIW and (2) a negative relationship between the level of host-regional SOE dominance and the CIW. We have also found insignificant effects of host-regional CAER and FDI-restricted industry on the CIW. Therefore, at the stage of IJV termination, we have confirmed that host-country institutions constrain the CIW through two informal mechanisms - rates of WFOEs/ successful WFOEs in a host industry and host-regional SOE dominance. We have found no evidence that host-country institutions constrain the CIW through two formal mechanisms - host-regional CAER and FDI-restricted industry.

5.2 Theoretical implications

This thesis contributes to IJV literature in the following ways. In general, it reveals several new mechanisms through which host-country institutions

constrain firm behaviours at different IJV life-cycle stages and may stimulate future research in those directions. In particular, first, it broadens our knowledge of culture as a set of institutional constraints on firm behaviours across IJV life-cycle stages. This thesis is the first to explore the impact of the national cultural dimension of IR on firm behaviours across IJV life-cycle stages, although existing research has examined the impact of national cultural dimensions of power distance (Hennart & Larimo, 1998; Morschett et al., 2010; Shane, 1993), individualism-collectivism (Jung & Suh, 2013), uncertainty avoidance (Brouthers & Brouthers, 2003; Erramilli, 1996; Makino & Neupert, 2000) and long-term orientation (Peng & Beamish, 2014) on firm behaviours at different IJV life-cycle stages. Second, it deepens our knowledge of state ownership as a set of institutional constraints on firm behaviours across IJV life-cycle stages. While existing research discloses the impact of state ownership of the host-country IJV partner on an IJV's management challenges (Liu et al., 2014), social control (Chen et al., 2010) or probability of dissolution (Mohr et al., 2016), this thesis is the first to reveal its impact on productivity spillovers from IJVs to domestic firms. This thesis is also the first to disclose the impact of host-regional SOE dominance on firm behaviours at the stage of IJV termination, while previous studies focus on its impact on firm behaviours at the stage of IJV formation (Liao, 2015; Meyer & Nguyen, 2005). Third, it enriches our knowledge of inter-organisational imitation as a set of institutional constraints on firm behaviours across IJV life-cycle stages. Existing studies also focus on the impact of inter-organisational imitation on firm behaviours at the stage of IJV formation (Lu, 2002; Xia et al., 2008), while this thesis is the first to reveal its impact on firm behaviours at the stage of IJV termination. Fourth, it expands our knowledge

of resource allocation institutions as a set of institutional constraints on firm behaviours across IJV life-cycle stages. We have found no significant impact of host-regional CAER on the CIW, while previous research has found significant effects of host-country allocation of land (Meyer & Nguyen, 2005), host government resource dependence (Wang et al., 2017) and host equity market (Driffield et al., 2016) on firm behaviours at different IJV life-cycle stages. Fifth, it expands our knowledge of FDI regulations as a set of institutional constraints on firm behaviours across IJV life-cycle stages. We have also found no significant impact of FDI-restricted industry (excluding WFOE-only industries) on the CIW, while existing studies have found significant effects of FDI restrictions (Blodgett, 1991, 1992; Brouthers, 2002; Franko, 1989) and complexity of FDI regulations (Puck et al., 2009) on firm behaviours at different IJV life-cycle stages.

5.3 Managerial and policy implications

This thesis has some important implications for both managers and policymakers. This thesis advises managers of how to organise efficiently and legitimately at different IJV life-cycle stages under host-country institutional constraints. First, at the stage of IJV formation, we advise managers to stick to conventional low transaction-cost mode of entry - the IJV mode when uncertainty of an FDI project is high and the WFOE mode when asset specificity of an FDI project is high (Zhao et al., 2004) - in indulgent host countries but not necessarily in restraint host countries, because the findings of Chapter 2 suggest that transaction costs have a greater impact on the organisational efficiency of an FDI project in indulgent host countries than in restraint host countries. Opportunism and/or bounded rationality will amplify the transaction costs associated with managing an FDI project in indulgent

host countries, because indulgent countries are characterised by a lower level of moral disciplines and a higher level of leisure and disorder than restraint countries (Hofstede, 2011).

Second, at the stage of IJV operation, we advise managers to pay special attention to partner selection-related spillovers. It is widely accepted that one benefit of join-venturing with an SOE is that it can help an MNE to gain market entry into state-controlled industries or favourable government policies (Brouthers & Bamossy, 1997; Ma et al., 2006). However, the findings of Chapter 3 suggest one cost of joint-venturing with an SOE - generating positive intra-industry productivity spillovers from the IJV to domestic firms, which can erode an IJV's technological advantages against their local rivals. The findings of Chapter 3 also suggest one benefit of joint-venturing with a POE - preventing intra-industry productivity spillovers from the IJV to domestic firms, which can protect an IJV's technological advantages against their local rivals.

Third, at the stage of IJV termination, we advise managers to selectively imitate the ownership mode of other foreign-invested firms within the same host industry, since the findings of Chapter 4 suggest that the ownership mode adopted by large numbers of foreign-invested firms (frequency imitation) and that adopted by successful foreign-invested firms (outcome imitation) gains strong legitimacy, which is vital to the success of a firm (Scott, 1995a). Frequency imitation is an effective strategy for a firm to deal with uncertainty and outcome imitation is an effective way of producing positive outcomes and avoiding negative outcomes though vicarious learning (Haunschild & Miner, 1997). We also advise managers not to convert an IJV into a WFOE

in a host region dominated by SOEs, because the findings of Chapter 4 suggest that the IJV mode is more legitimate than the WFOE mode in those regions. Regional SOE dominance may render local institutions unfriendly for MNEs to operate on their own (Liao, 2015), and keeping an IJV partnership with host-country firms may help cope with those institutions.

This thesis also advises host-country policymakers of how to attract and utilise inward FDI effectively by shaping local institutions. To attract inward FDI effectively, we first advise policymakers of indulgent countries to enhance local rules and laws against business opportunism, because the findings of Chapter 2 suggest that the risk of opportunism is higher in indulgent host countries than in restraint ones, which could expose asset-specific FDI projects to local exploitations (Anderson & Gatignon, 1986). Asset-specific FDI projects may avoid those indulgent host countries where host-country formal institutions are insufficient to protect their transaction-specific assets. Second, we advise policymakers of indulgent countries to give a higher priority to maintaining political order in the nation to provide foreign-invested firms with a relatively stable political environment, since the findings of Chapter 2 suggest that political risk is more likely to run out of control in indulgent host countries than in restraint host countries, which could expose an FDI project to frequent political changes in indulgent host countries. Without a stable political environment, high costs of responding to political changes can drive potential foreign investors away from indulgent host countries. Third, we advise host-country policymakers to reduce the influence of local SOEs on regional business, because Chapter 3 indicates that IJVs are reluctant to convert into WFOEs in host regions dominated by SOEs. Regional SOE dominance may create adverse institutions under which

foreign investors can hardly thrive on their own (Meyer & Nguyen, 2005) and those which are unwilling to form an IJV partnership with host-country firms may give up their plan to invest in those regions.

To utilise inward FDI effectively, we first advise host-country policymakers to alter the conventional belief that establishing IJVs will assist domestic firms' absorption of foreign knowledge (Blomström & Sjöholm, 1999; Trade & Conference, 2003), because the findings of Chapter 4 suggest that intra-industry productivity spillovers from PIJVs to domestic firms are very limited. This could result from PIJVs' lack of motivations to share knowledge with domestic firms, since they are rivals in host markets. This could also result from small technology gaps between PIJVs and domestic firms, so that there is little potential for domestic firms to learn from PIJVs. Then, we advise host-country policymakers to give more weight and support to the establishment of SIJVs, because Chapter 4 also suggests that SIJVs can generate a greater magnitude of intra-industry productivity spillovers to domestic firms, especially to SOEs, than PIJVs. Since an SOE is a government agency, host-country policymakers can legitimately require an SIJV to share knowledge with domestic firms.

5.4 Research limitations and further research recommendations

The research limitations should be acknowledged, considering reliability and validity issues.

First, our assumption of conformity to institutions is limited. We could not assess whether an MNE has to challenge host-country institutions to better serve its global strategy, because we do not have such detailed information. We assume that conformity is the principal response to host-country

institutional constraints. Although this assumption is subject to critics due to the possibility of nonconformity to institutions, it is widely adopted in existing international business research possibly due to the prevalence of conformity to institutions (Brandau, Endenich, Trapp, & Hoffjan, 2013). Future research may take into account home-country institutional constraints and adopt an institutional duality view on institutional constraints on firm behaviours across IJV life-cycle stages (Kostova & Roth, 2002).

Second, our assumption of investment motivations is limited. We also could not include investment motivations in either theoretical discussions or empirical tests, because we do not have detailed information about investment motivations. We assume that the effects of host-country institutional constraints on firm behaviours at different IJV life-cycle stages are independent of investment motivations. This assumption is subject to critics since existing literature suggests that investment motivations may interact with other factors to influence firm behaviours (Girma, 2005), but this assumption is widely adopted in existing international business research (Driffield & Love, 2007) possibly due to data availability. Future research may take into account investment motivations and study the potential interacting effects of investment motivations and host-country institutional constraints on firm behaviours at different IJV life-cycle stages.

Third, the scope of firm behaviours across IJV life-cycle stages is limited in our research. We only consider the FDI OMC of an IJV at the stage of IJV formation, intra-industry productivity spillovers from IJVs to domestic firms at the stage of IJV operation and the CIW at the stage of IJV termination. We fail to take into account other firm behaviours at different IJV life-cycle stages

such as choosing between a greenfield IJV and an acquired IJV (Hennart & Slangen, 2014) at the stage of IJV formation or liquidating an IJV (Yan & Zeng, 1999) at the stage of IJV termination. Since host-country institutions may also influence an MNE's choice between a greenfield subsidiary and an acquired subsidiary (Brouthers & Brouthers, 2000) or to liquidate an IJV (Lu & Xu, 2006), future research may consider a wider scope of firm behaviours across IJV life-cycle stages.

Fourth, the scope of host-country institutional constraints is limited in our research. We only take into account host-country national culture, state ownership, inter-organisational imitation, resource allocation institutions and FDI regulations. We pay little attention to other host-country institutional constraints such as the rule of law (Hearn, 2015; Ramachandran et al., 2011; Roy & Oliver, 2009) or shareholder protections (Devarakonda et al., 2020; Meyer et al., 2014; Talamo, 2009), although they may affect firm behaviours at different FDI life-cycle stages (Meyer et al., 2014). Future research may consider a wider scope of host-country institutional constraints on firm behaviours across IJV life-cycle stages.

Fifth, the scope of our research contexts is limited. We only concentrate on behaviours of firms that have operations in China. Although we believe that our theoretical arguments may apply to a wider scope of transition countries, a single home-country or host-country sample may not fully reveal that potential. Compared to other transition economies such as Vietnam, China has some unique attributes including huge outward FDI in resource extraction activities dominated by SOEs (Gammeltoft, 2008) and an earlier start in SOE

reform (Vu, 2009). Future research may examine whether our findings are consistent with firm behaviours in other transition economies.

Sixth, the consistency of our research contexts is limited. Resulting from data availability in measuring host-country institutions, especially the national cultural dimension of IR, we conduct the first empirical study in a multiple host-countries context while the second and third empirical studies in a single host-country context. This arrangement may bring inconsistency to the research settings of this thesis. Future research may collect data for the subnational cultural dimension of IR and examine its influence on firm behaviours across IJV life-cycle stages in a single host-country context.

Seventh, the measurement validity of our research is limited. Our use of archival data is incapable of capturing the perceptions of managers of the pivotal variables such host-country institutional pressures (Meyer *et al.*, 2014) on firm behaviours at different IJV life-cycle stages. Future research can use survey instruments to complement our documentary data.

Eighth, the scope of industry is limited in our research. We consider only firm behaviours in the manufacturing industry. Some existing studies suggest that to some extent behaviours of manufacturing firms differ from those of service firms (Brouthers & Brouthers, 2003). Therefore, future research may also test whether our arguments are supported by behaviours of service firms.

Last but not least, the firm size in our research is limited. We have used data from the Annual Report of Industrial Enterprise Statistics (ARIES) data source for all empirical tests. Due to data availability in the ARIES, we can only examine the behaviours of relatively large firms with annual sales of at least five million RMB (Wang et al., 2014b). Since small and medium-sized

firms (SMEs) may be subject to liability of smallness (Maekelburger et al., 2012), their responses to host-country institutional constraints may differ from larger firms (Beck et al., 2005). Future research may examine whether our findings are consistent with SME behaviours.

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